PVP

PAINT and VARNISH PRODUCTION

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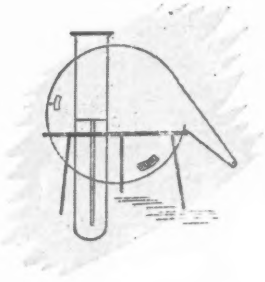
ACOSIX 700 and ACOLIN



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1

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2

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3

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4

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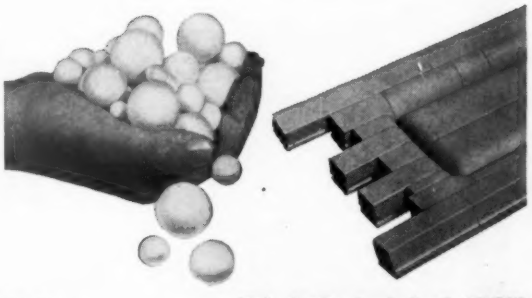

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PAINT and VARNISH PRODUCTION

(REG. U.S. PATENT OFFICE)

MAY 1960

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NO. 6

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In Our 50th Year

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EDITORIAL COMMENT

Our Aerosol Paint Issue

IT is estimated that some 85 million cans of aerosol paint will be sold in 1960, representing a market of over 110 million dollars. By 1963 sales of aerosol paint is expected to reach 150 million dollars, as more and more favor the aerosol can for painting radiators, toys, outdoor furniture, machinery, and touching up automobiles. Unquestionably the chief selling feature of aerosol paints is their ease of application. Moreover, this easy-to-use product eliminates the need of cleaning sloppy brushes and rollers —a characteristic particularly favorable to women.

In the interest of keeping you abreast of the developments taking place in aerosol formulations, packaging, labeling and marketing, PVP is indeed pleased to present in this issue a comprehensive series of articles on various phases of aerosol manufacture and marketing, beginning on page 35. We urge you to read this series and find out what new developments are taking place in the burgeoning field of aerosol paints.

Too Much Color?

THE abundance of color available for home interiors can lead to a "misery of choice for homemakers unless manufacturers use more judgement and selection."

This was the advice of William M. Stuart, president of the Martin-Senour paint company of Chicago and a noted advocate of color in home decoration.

Speaking before a group of the New York Paint, Varnish, and Lacquer Association recently, Mr. Stuart said: —"The oversupply of paint colors, with their many subtle gradations and variations, are only confusing the shopper.

"The typical homemaker has good taste in deciding on colors until she gets to the retail store. Then the choices are too many, too complex—her eye becomes over saturated with color and her selection, too often, is regretted later.

"Manufacturers and retail merchants can overcome the color dilemma through more judicious color merchandising and display. For example, Martin-Senour in recent years has developed a color program which presents a broad but selective range of colors based on the company's continuous survey of trends in the home furnishings field and room decoration.

"There is no need to dazzle the buyers' eye with a garish outburst of plentitude. A better service can be performed if the consumer is enchanted and pleased rather than overwhelmed with color."

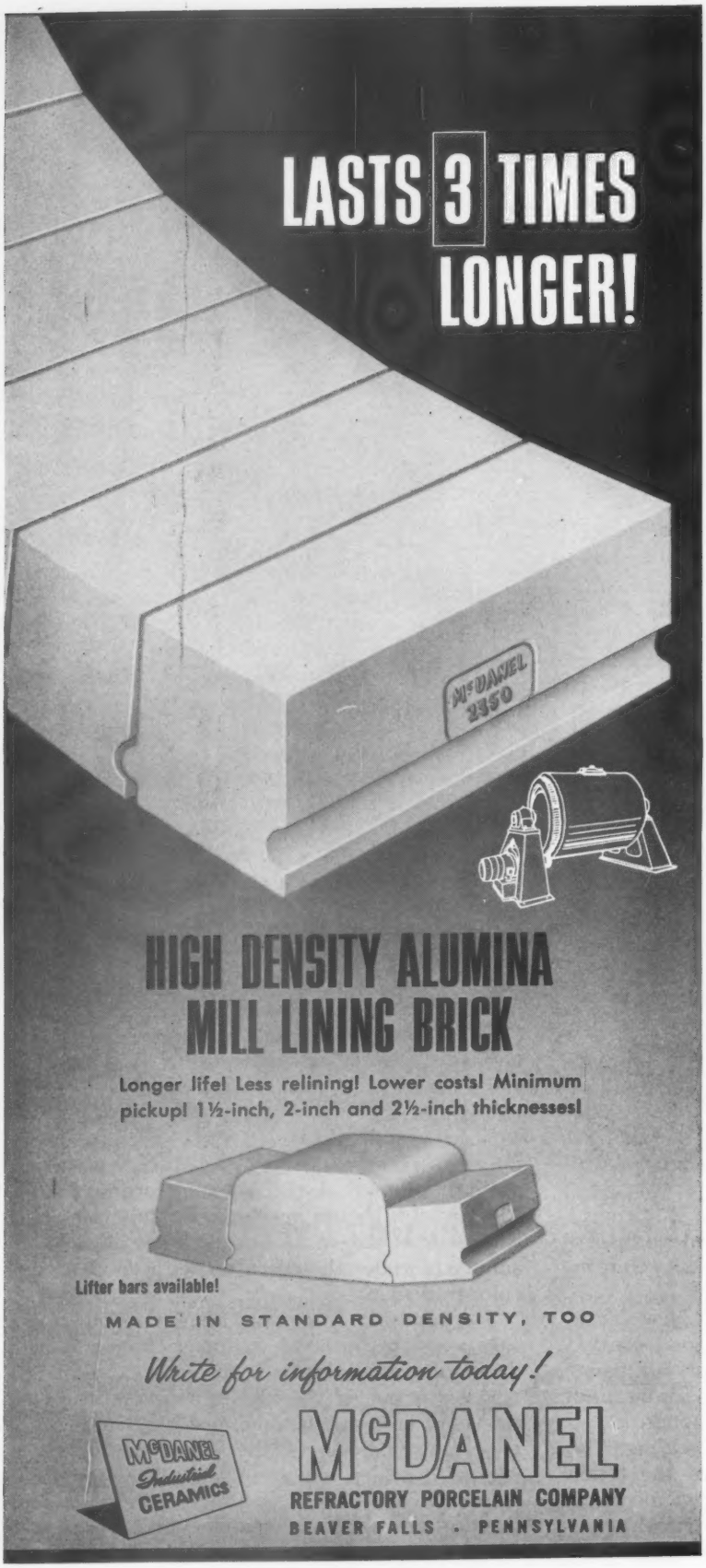
Mr. Stuart noted that leading interior designers, decorators, and architects, even though they are trained to work with the full spectrum, have found it more practicable to work from a carefully selected palette of colors that have ample range and versatility.

"An abridged presentation of colors can come close to relating with inventoried merchandise in furniture, home appliances, and fabrics," he said. This fact was demonstrated to the New York audience with a presentation of wall colors that coordinated with various home furnishings textiles.

In closing, Mr. Stuart emphasized that the paint industry should rightfully consider itself a vital adjunct of the home furnishings field. Moreover, it should develop color programs that can relate to the entire home market rather than simply bewilder the customer with an unneeded color profusion.

We think Mr. Stuart has a point. Too often a sale is lost because the customer cannot make a decision on the color he wants.

Color is one of the biggest features in selling paint but here the customer needs guidance. The cooperative efforts of the paint manufacturer, the paint dealer, and the paint contractor in developing sound color programs will go a long way in impressing the customer rather than confusing him.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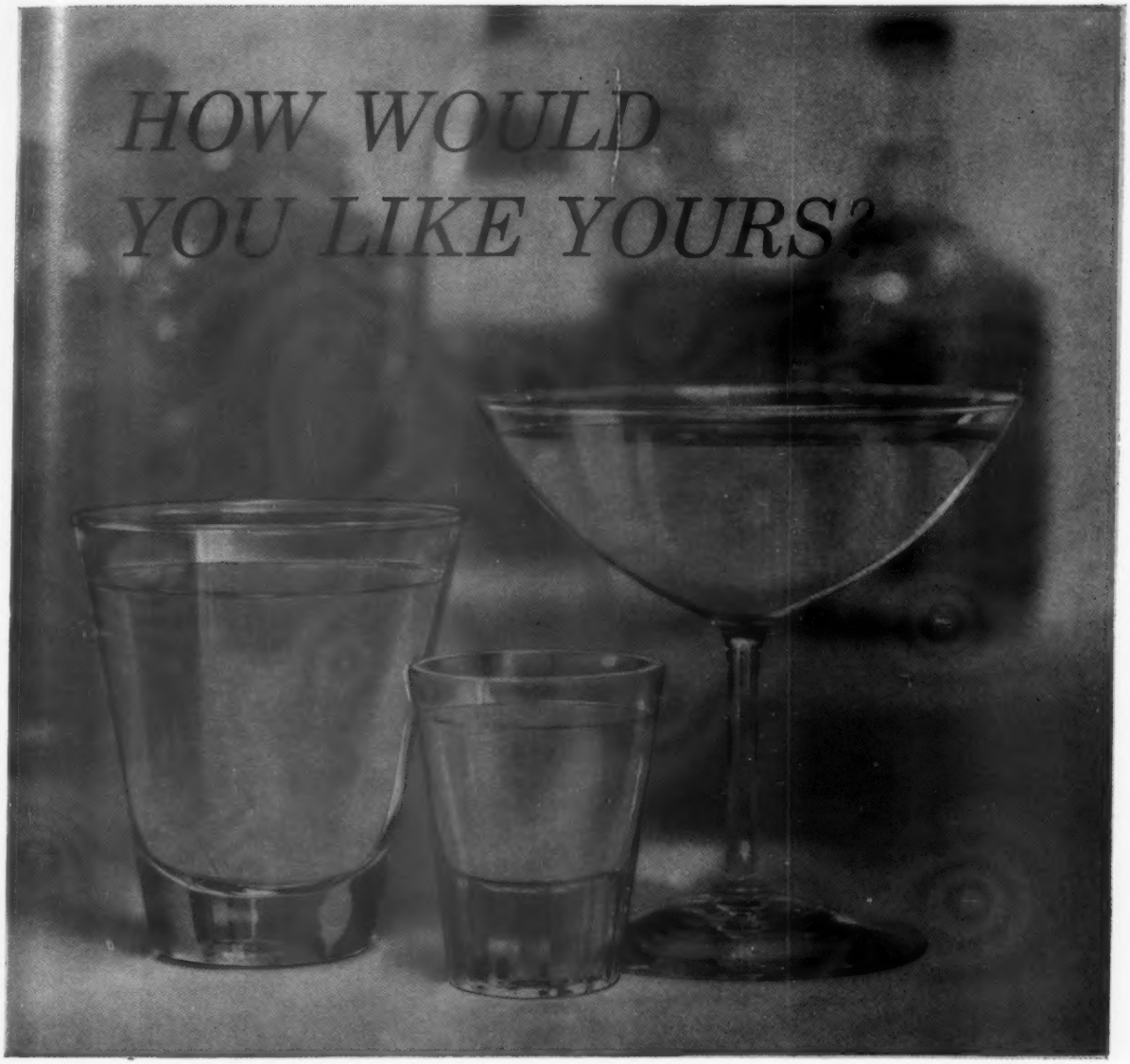

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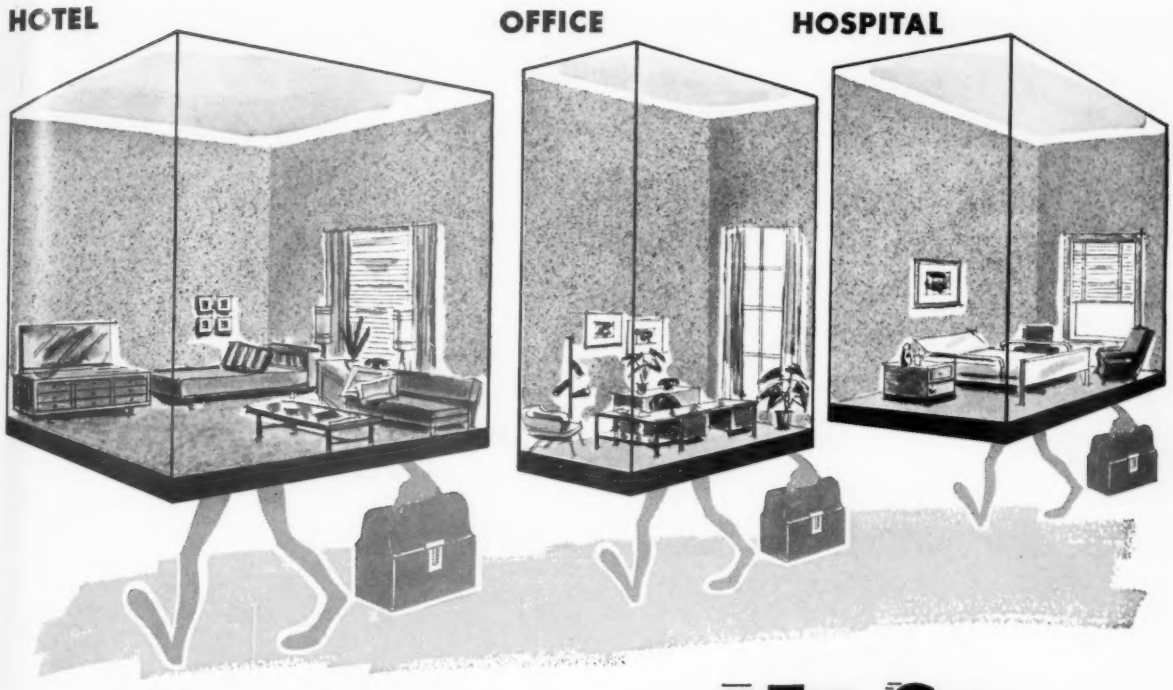

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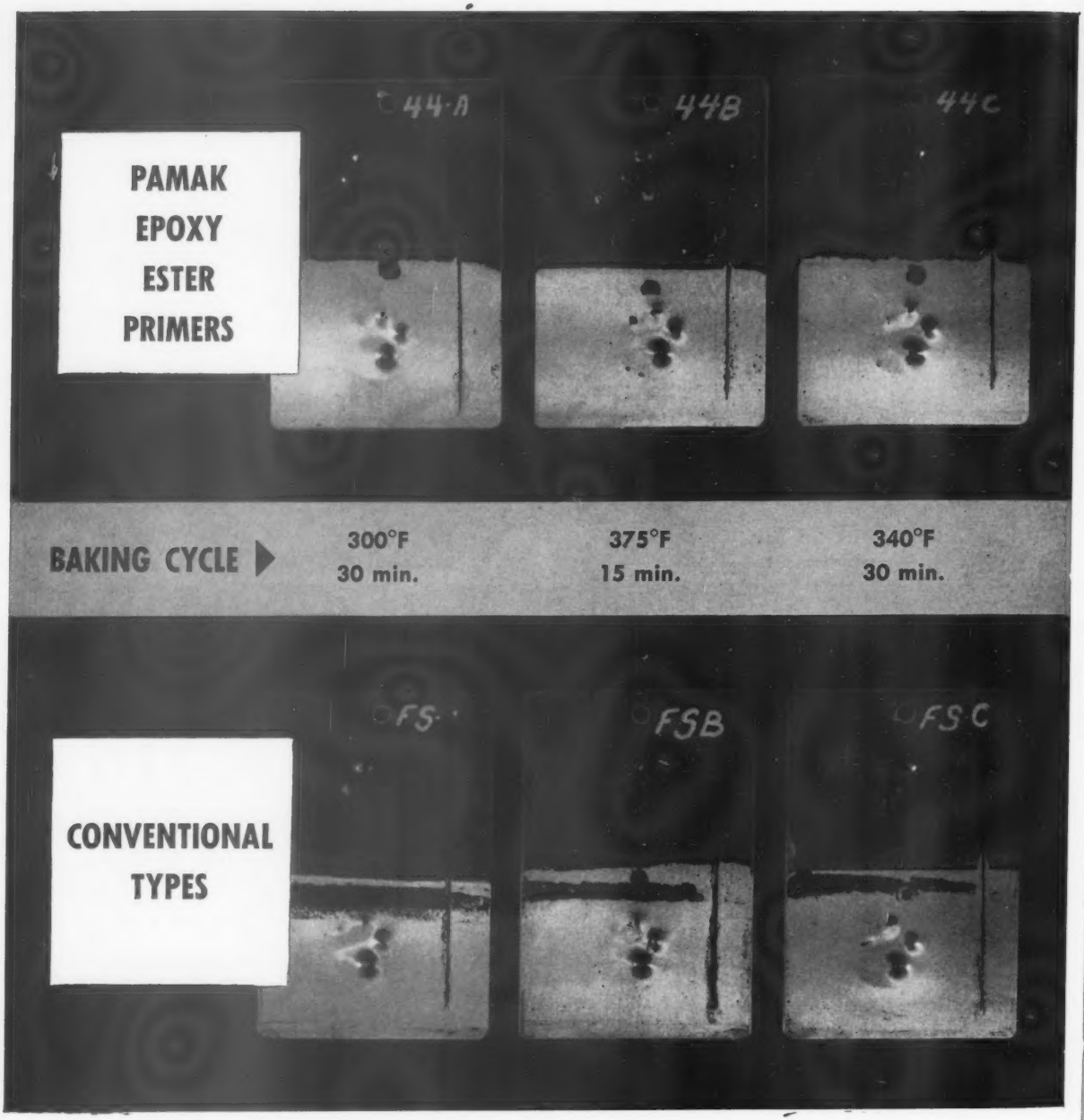

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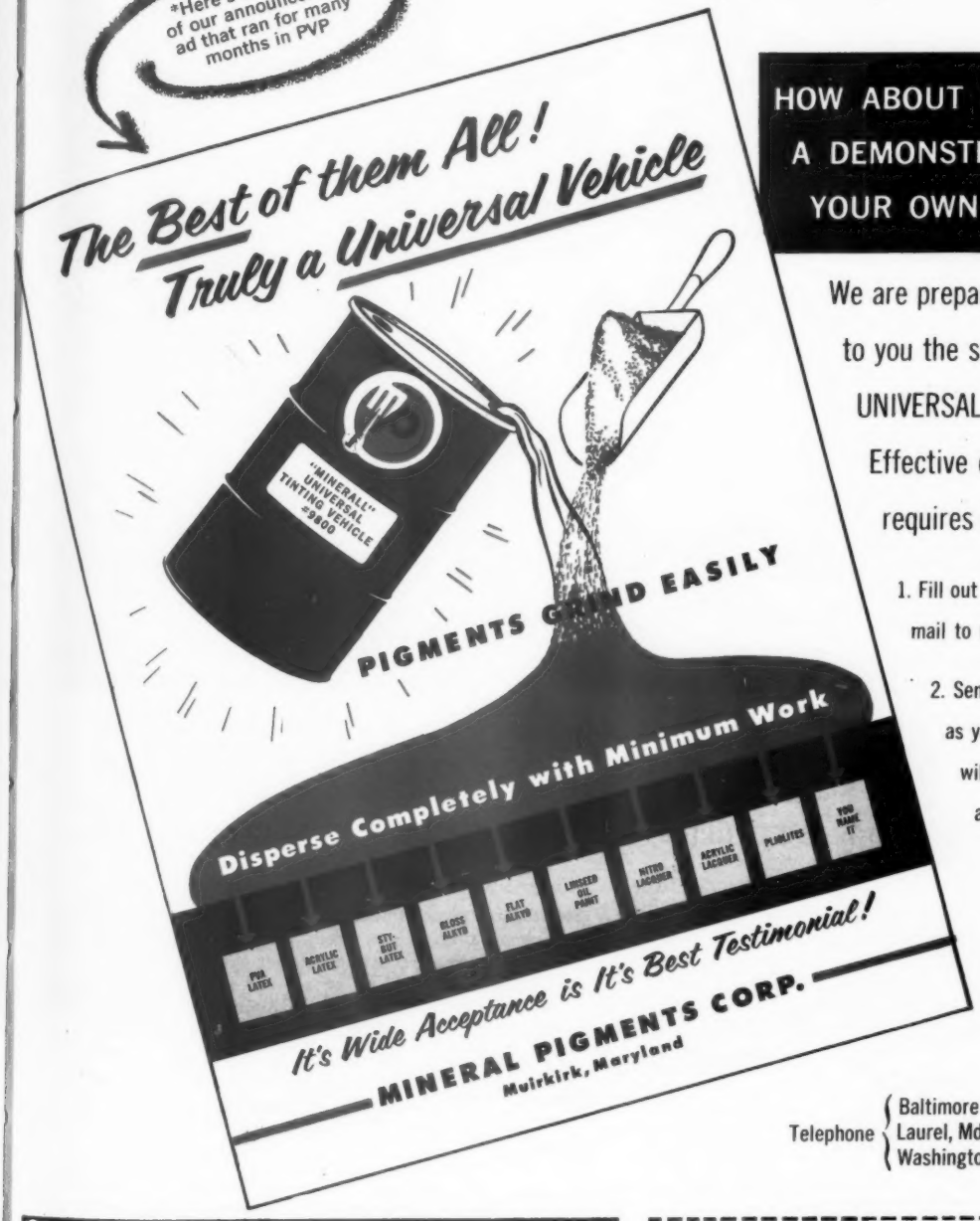

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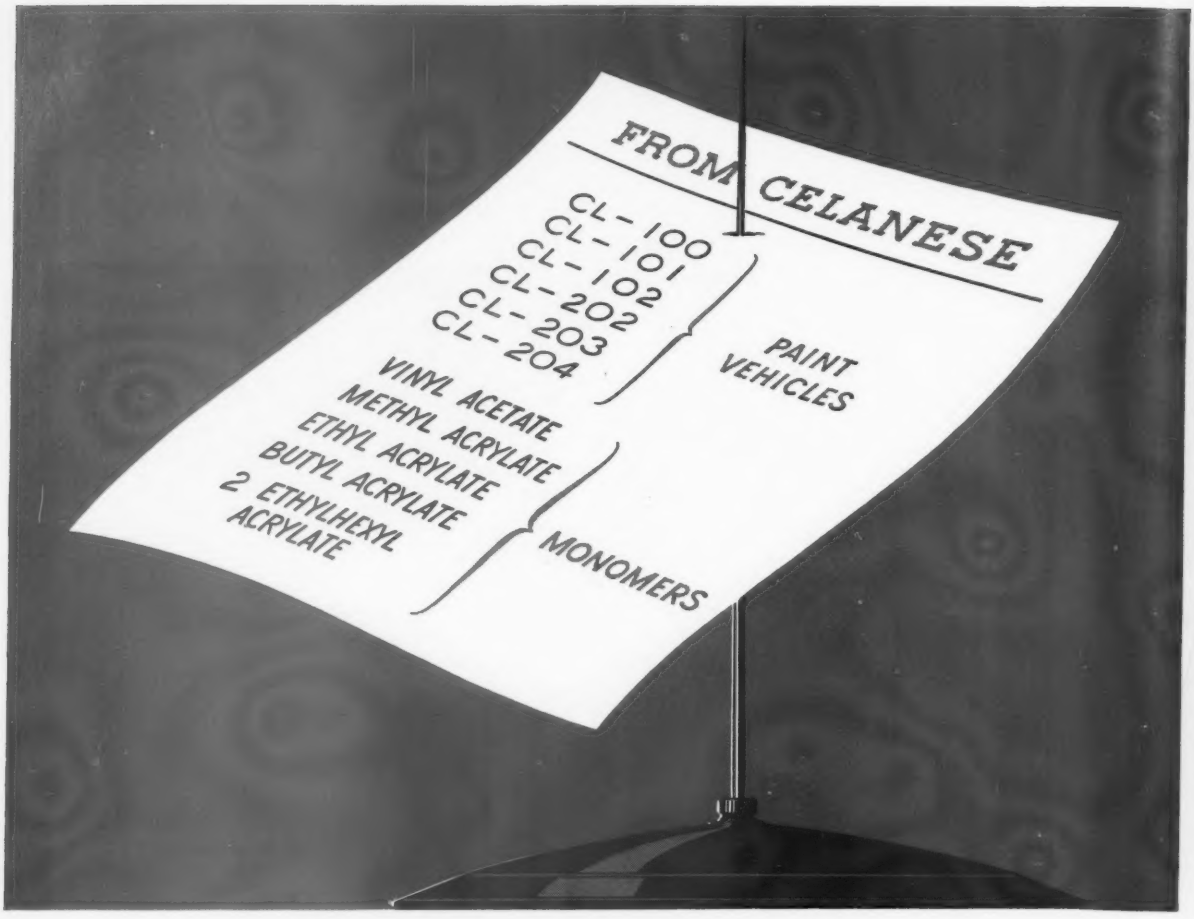

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Chicago is noted, led to frequent, prematu
failures of exterior masonry paints. The reaso
The moisture, driven into masonry by t

ind, served only to encourage the attack of
kalies in the concrete.

ow to stop the all too common failures was
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kali attack and the extremes of the area's
weather. Paint life became a matter of years, rather than months. Sales and profits on masonry paints rose steadily as costly complaints and adjustments virtually disappeared.

To make the PLIOLITE S-5 Story happen to you—as it did to manufacturers in Chicago and many other localities across the country—just follow the simple procedure on the next page.

Photographs taken through the cooperation of Elliott Paint and Varnish Company, Chicago, Ill.

To make the Chicago Story your success story, just follow this simple plan:

3-STEP PLAN FOR INCREASING YOUR MASONRY PAINT SALES

1 **Get the full story** on PLIOLITE S-5 from your Goodyear Chemical Division representative. You'll find him well-qualified to help develop the type of paints you'll be proud to produce.

2 **When you're ready** to fill the pipelines, set up a meeting with your sales staff and let your Goodyear Chemical Division representative show them how best to present PLIOLITE S-5 paints to your dealers.

3 **Before launching your promotion,** be sure to take advantage of the sales aids which Goodyear offers to manufacturers using PLIOLITE S-5.

Don't wait for some other manufacturer to author the next PLIOLITE S-5 story—start writing it today by calling your Goodyear Chemical Division representative. Goodyear, Chemical Division, Dept. Q-9450, Akron 16, Ohio.

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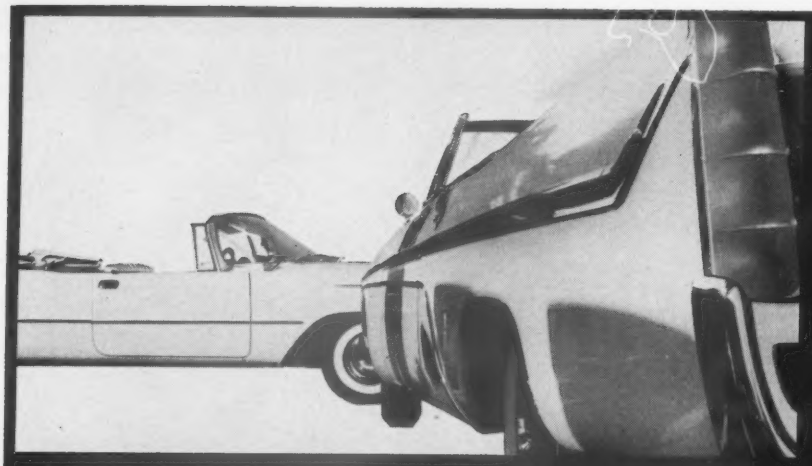

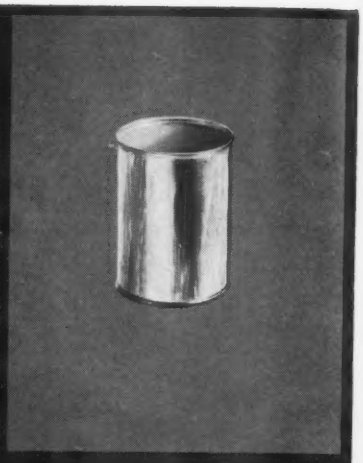

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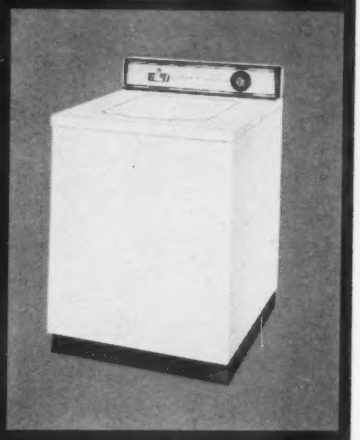
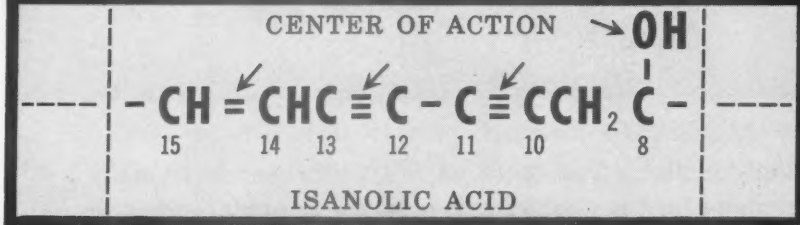


CENTER OF ACTION



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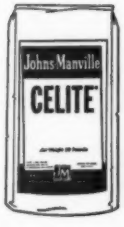

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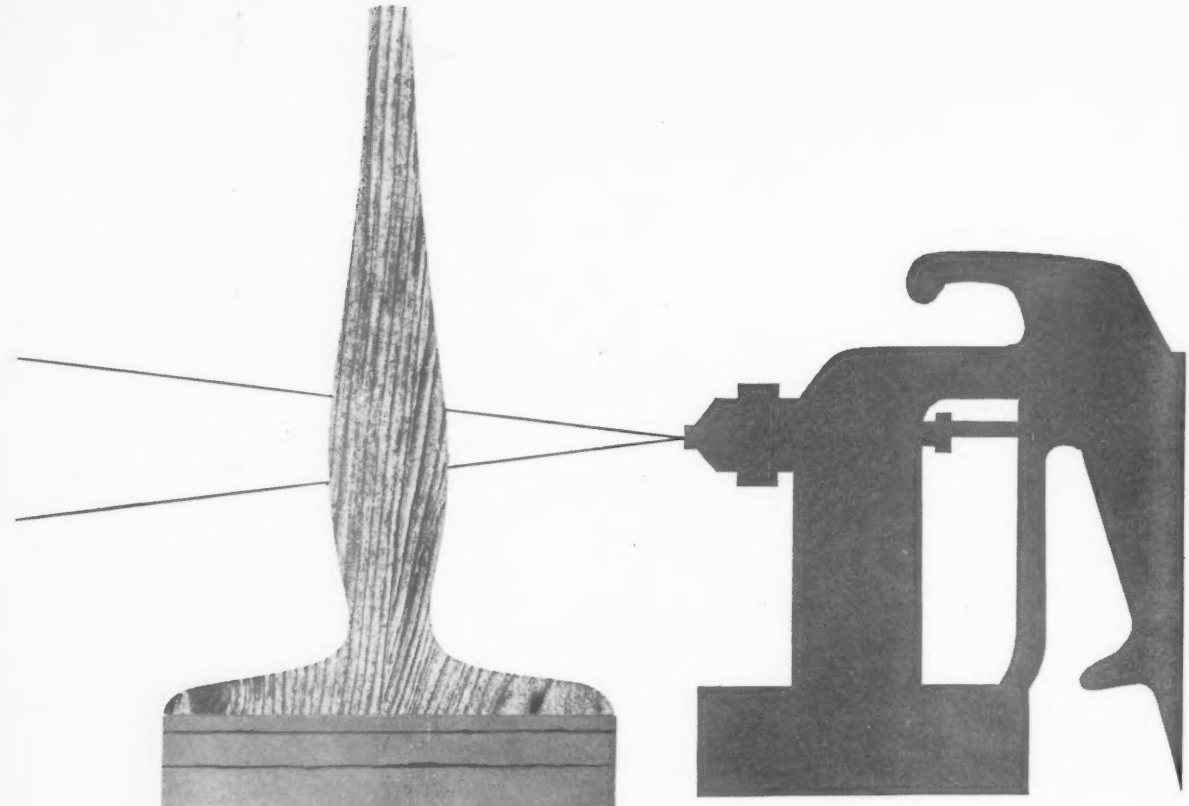

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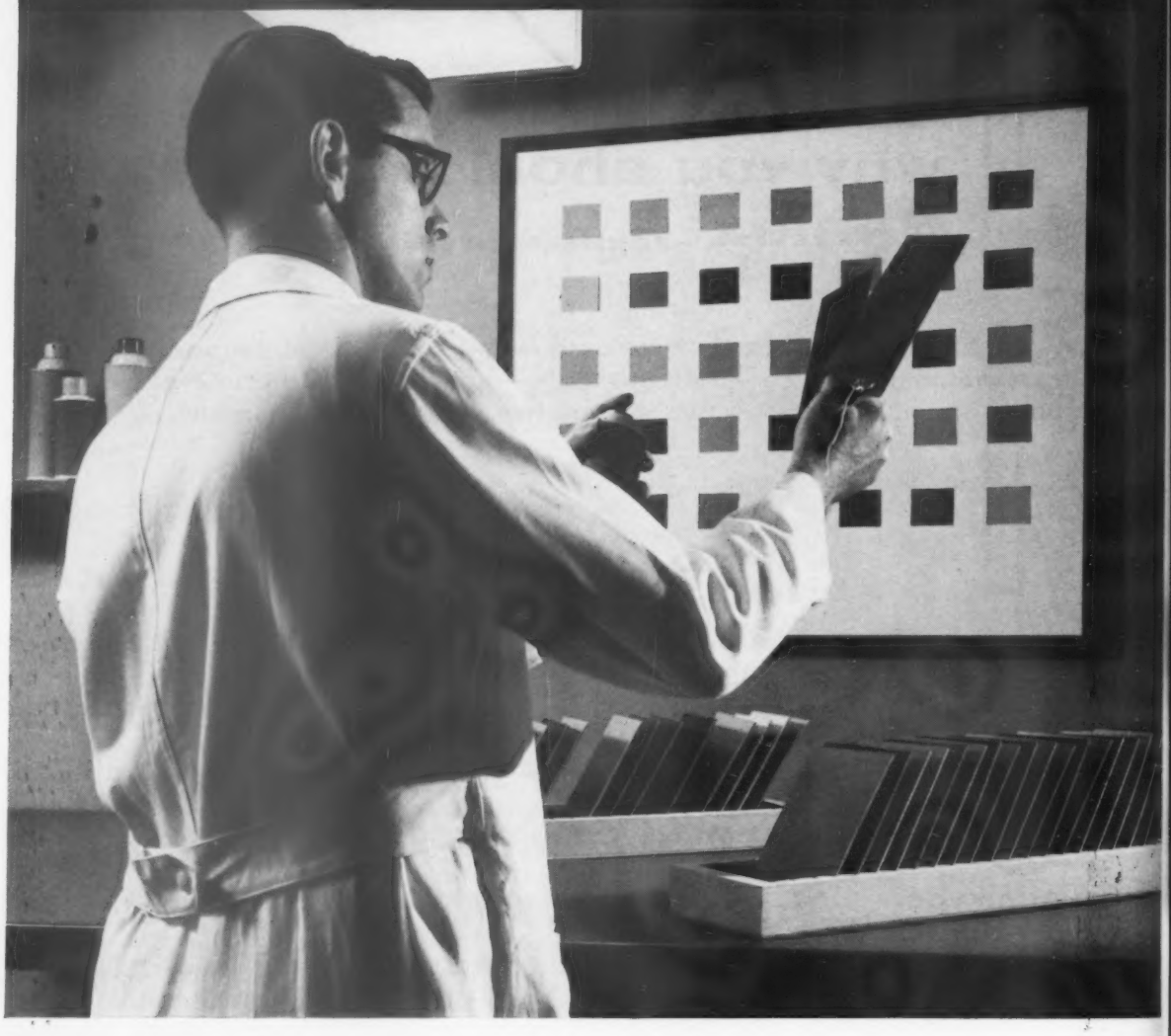
The contract packager had the answer... *another success story from the ISOTRON file.*



He adds the spray . . . takes nothing away

If you'd like to reach the vast aerosol market but fear your product might be changed too much in push-button cans, Sprayon Products, Inc., of Cleveland, may have good news for you.

Sprayon has aerosol-formulated thousands of successful specification finishes and products. Sprayon preserves the basic product characteristics you want . . . yet meets the demand of aerosol packages and market. A pioneer contract packager and producer of its own unique aerosol valve, Sprayon also works with marketers of many other household and industrial products.

Formulations are carefully coded and indexed for exact re-orders and the quality control section checks each order for color stability, consistency and other factors. Five filling lines are maintained, including many of the latest automatic innovations. Sprayon also offers customers a variety of sales and marketing aids.

Success of your aerosol product depends basically on choosing the right can, valve and propellent. On this score, a contract packager can give you expert advice. He may well recommend Pennsalt ISOTRON® . . . the extra-pure, extra-dry, factory-sealed propellents that power a host of outstanding aerosol products.

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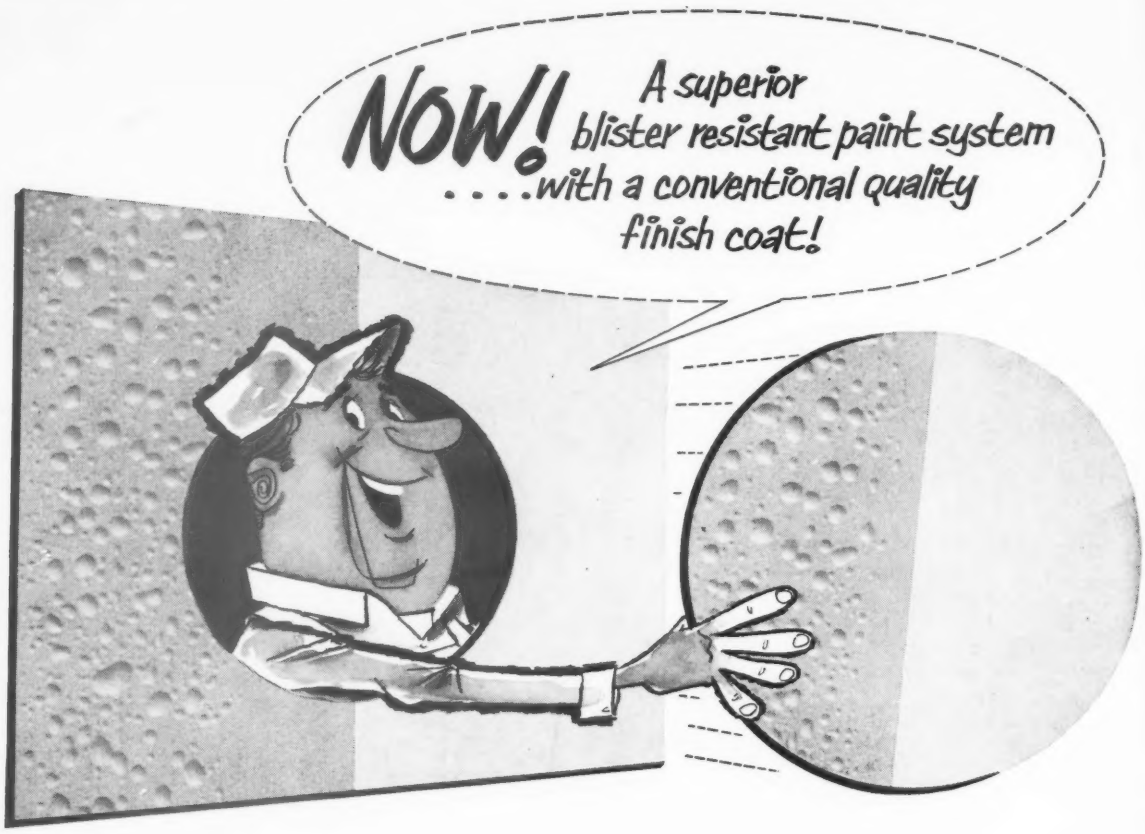
(This advertisement is printed on paper stock containing Glidden ZOPAQUE Titanium Dioxide.)



TEST PANEL on right shows that no blistering occurred in the paint system using a primer formulated with Eagle-Picher Super Sublimed White Lead—top coated with Federal Specification TT-P-103.

Yours...with EAGLE-PICHER Super Sublimed White Lead!

Accelerated tests prove that blistering *does not occur* when quality house paint primers are formulated with Eagle-Picher Super Sublimed White Lead. Even under adverse moisture conditions, these primers show very little water absorption, low volumetric swelling and superior adhesive characteristics.

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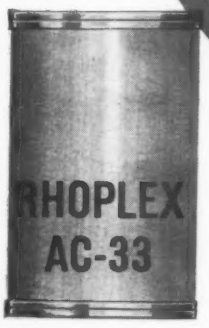

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Also, paintmakers reap other benefits from Rohm & Haas acrylic emulsion experience. In 6½ years of testing and applications-development work, Rohm & Haas has amassed a wealth of practical technical data on the formulation and application of acrylic emulsion paints. This information has been incorporated in product literature available to the paint industry. In addition, Rohm & Haas has prepared dealer aids and other promotional material to assist manufacturers in the marketing of paints made with RHOPLEX AC-33. Write for our 54-page *Progress Report No. 6*, a summary of formulating information and outdoor exposure data on RHOPLEX AC-33 paints.

RHOPLEX is a trademark, Reg. U.S. Pat. Off. and in principal foreign countries.

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AEROSOL COATINGS

PACKAGING

FORMULATION

PRODUCTION

Aerosol Paint Sales Show Marked Growth 37

Sprayon Operation Features Automatic Filling Line 44

Labeling Aerosol Paints 49

How to Manufacture Foolproof Aerosol Paints, by John J. McAnally 55

Aerosols Featured at Packaging Show, by E. G. Roberts 61

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Uninterrupted production pressure filling always increases your profits. The surest way to fill aerosol containers fast and trouble-free is to use Newman-Green valves. This simplified valve design gives you a competitive edge throughout the paint industry. Exclusive features include metering orifices in spray head that are reached easily for cleaning, a design that eliminates the sources of clogging due to a build up of paint particles, and a spray pattern that can be varied completely in seconds simply by changing the valve head only.

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AEROSOL PAINT SALES SHOW MARKED GROWTH

Volume Expected to Top 150 Million Dollars by 1963, Potential Market is Estimated at 200 Million Units.

A SALES profile of aerosol coatings, beginning in 1951, would show the smooth ascent of a rolling hill until, abruptly in 1955, a steep mountain outline is traced with no visible peak.

Above the clouds enveloping the future, 1963 sales are expected to top $150,000,000, a level almost twice as high as that reached in 1958, the last year for which industry-wide figures are available.

This is the forecast of the market surveys department of a leading propellant manufacturer, Allied Chemical's General Chemical Division.

To coating formulators, aerosol fillers and other potential manufacturers, the forecast augurs well for increased interest in this convenient form of coating application.

Perhaps it is best to begin with the types of coatings conducive to aerosol application, and some of the reasons for their skyrocketing popularity. The spray-on products primarily include varnishes (mixtures of resins and drying oils) and enamels (mixtures of pigments and varnishes), with the latter far in the sales lead.

The rationale of aerosol coatings is found in this fact: they permit duplication of professional spray methods in the home or factory resulting in quick, easy application of a quality film and eliminating the need for costly spray equipment, its cleaning and maintenance. To the layman who can compare aerosols only to their brush-on counterparts, aerosols leave no brush marks, are less messy and generally dry faster. When these factors are coupled with the "do-it-yourself" trend of the times, cogent arguments for aerosol coatings' market success are at hand.

An example of "do-it-yourself" application would be the retouching or repainting of the countless metal products found throughout the home scene, such as appliances, autos, bicycles, toys, metal cabinets, ornamental iron furniture, etc. The acrylic resins and the quick-drying lacquer-type coatings are most suitable here. It is common knowledge that these coatings have proved rather unsuccessful when applied by brush.

This inherent aerosol charac-

Aerosol paints are ideal for painting outdoor furniture.

teristic of making more and more consumer applications feasible gives rise to the expectation that aerosol growth will lead to an enlargement of the entire coatings market.

Looking ahead, it is believed that many industrial users will find aerosol coatings offer over-all economies in labor for specialty jobs such as color coding. Some lumber companies, for instance, now mark the ends of finished lumber for identification with aerosol sprayed color codings.

In the home scene, multi-color and speckled-finish paints are considered good new-product possibilities.

While water-based paint sprays may also find application for touch-up work and painting of small areas in the home, they are not economically feasible for covering large areas.

Aerosol coating drying times can be controlled to fall in the area bounded by five minutes on the short side and 12 hours on the long. Since aerosols employ diluents or thinners in addition to the solvents of brush-on coatings, their drying time is actually dependent first upon the evaporation rate of the diluents, then upon the evaporation rate of the solvents.

Turning to the central question, "How does one become an aerosol coating manufacturer?", the first step—and this applies to all potential aerosol manufacturers—would be to consult one of the recognized aerosol laboratories whose staffs have extensive experience in aiding customers to do just this.

Here is the gist of what General Chemical's aerosol specialists advise their customers (coating manufacturers and aerosol fillers are taken separately because their problems are necessarily of a different nature):

Bicycle painting is made feasible by aerosols.

Types of Coatings

Turning to the technical side of push-button coatings, General Chemical's aerosol specialists report that most coatings that can be air sprayed can also be formulated as an aerosol. Thixotropic coatings are not suitable. The formulation's viscosity must be reducible with diluents to approximately 50 centipoise. The aerosol products are similar in formulation to air spray coatings. Both are thinned to lower viscosity than their brush-on counterparts.

Drying times for brush-on and spray coatings would be about equal were it not for the fact that brush-on application invariably gives a thicker coating.

Coating manufacturers may obtain the necessary modifications for aerosol formulation of their projected aerosol coatings by simply submitting the coatings to a competent aerosol laboratory. The laboratory need not know the complete coating formulation; however, knowledge of the base resin type (vinyl, alkyd, acrylic, etc.) and of the solvent system saves many days of formulation work.

In some cases an abnormal concentration of relatively expensive solvents is required to increase the compatibility of propellants with the coating formulation. Both these, it should be stressed, are the exceptional cases.

Once the aerosol formula modifications are determined, the coating manufacturer may elect either to have his spray product packaged by a reputable aerosol filler, or he may set-up his own aerosol-filling facility.

Aerosol fillers, on the other hand, are advised that the simplest way to enter the aerosol coatings business is to purchase desired coatings from appropriate manufacturers whose generations of experience in formulation cannot be duplicated.

Once particular coatings are chosen, an aerosol laboratory must determine the quantities of solvents and diluents to be added for proper viscosity for final formulation with the propellant. With this information, the coating manufacturer is able to supply his products premixed with the necessary additives. For economy, coatings are generally purchased by the aerosol filler in large, industrial-size quantities.

Alternatives for the aerosol filler are more complex, and involve the employment of an expert coatings formulator, or chemist. The formulator's job does not end when he formulates the desired coatings. He must also be capable of setting up coating production facilities. Once again, an aerosol laboratory must modify the projected formulations for aerosol packaging.

Or, using existing formulations from textbooks, or those published by resin producers, the aerosol filler and his coatings formulator can select coatings, have them tested or modified for spray-on application by an aerosol laboratory, and then set up coating production facilities. It should be noted here that all the necessary raw materials for coating production are generally available in liquid form for convenient mixmixing. These raw materials include resin solutions (usually 50% solid content), pigment dispersions, metallic dryers, antioxidants, solvents and diluents.

At this point, the propellant comes into play, and the propellant manufacturer can offer his greatest service. Aerosol propellants are halogenated organic compounds known as fluorocarbons with long, hard-to-pronounce tech-

nical names. For the sake of simplicity and ready identification, an industry-wide code system has been adopted which labels each of the propellants by number.

General Chemical's aerosol specialists report "Genetron" 12 is the preferred propellant for aerosol coatings. With a boiling point of −21.6°F., "Genetron" 12 quickly evaporates from the sprayed coating, eliminating the possibility of "pock marks" or an "orange peel" effect. This propellant is believed to be most conducive to a smooth, even coverage.

It should be emphasized that no special permit is required to handle fluorocarbons such as the "Genetron" propellants. In fact, all "Genetrons" sold are of low toxcity, non-flammable and easy to handle.

Customers with large-size operations generally order tank-truck shipments containing approximately 30,000 pounds of the propellant, although tank-car quantities of 60,000 to 100,000 pounds are also available.

Many small customers begin production with 145-pound cylinders, later graduating to ton cylinders, the most popular size. For experimental work, cylinders with as little as 10 pounds of propellant are available from General Chemical's 37 "Genetron" stock points throughout the country.

The propellant cylinders may be handled with a large selection of motorized and hand-operated hoists, cradle dollies and other equipment. The aerosol laboratory will aid in determining which types of equipment are most suitable to a particular operation. Information along these lines is of utmost importance to the coating formulator setting up his own filling line, as well as to the smaller aerosol fillers.

Now, with the potential aerosol coating manufacturer ready to formulate detailed plans for entering the business, here are some additional forecasts from General Chemical's market surveys department:

1. It is estimated that aerosols could replace at least 95% of standard can sales involving half-pint or smaller cans of coatings.

2. Approximately 50% of the one-pint sales of coatings are assumed to be suitable to aerosol application.

3. The potential market for aerosol coatings is estimated at 200,000,000 units — exclusive of new-use categories which may first become feasible with aerosol application.

As for size of the aerosol can, the 16-ounce unit is presently preferred and this preference is expected to continue as more consumers become aware of the advantage of aerosol coatings. By 1963 it is estimated that approximately 65% of aerosol coating sales will be in 16-ounce cans. Next in order of sales preference are the 12-ounce and finally, the six-ounce units.

Supplementing the detailed planning necessary to initiate production, the potential manufacturer must plan an effective merchandising program if marketing success is to be achieved.

In General Chemical's words:

"The growth of the aerosol industry has been highly dependent upon two factors: the utility and inherent advantages of the products, and successful merchandising by marketers. Future growth, increased sales, and profits will undoubtedly come to firms which are willing to merchandise and advertise new products to the fullest. . . ."

Starting formulations by Allied Chemical's Plastics and Coal Chemicals Division are an example of those available to aerosol fillers from prominent resin manufacturers. (See Table I)

TABLE I—AEROSOL COATINGS

SUGGESTED STARTING FORMULATIONS

Red Air-Dry Enamel	Pounds	Gallons
Toluidine Red	20.87	1.76
"Plaskon" Alkyd 50% Solids	185.51	24.71
Toluene	272.00	37.70
24% Lead Naphthenate	1.16	0.12
6% Cobalt Naphthenate	0.63	0.08
Antioxidant B	0.09	0.01
"Genetron" 12	393.24	35.62
Total	873.50	100.00

Viscosity @ 25 C, No. 4 Ford Cup, Seconds	14-16
Total Solids, per cent	13
Pigment-Volume Concentration, per cent	13.03

Aerosol Spark Varnish	Pounds	Gallons
"Plaskon" 3725	100.0	10.63
Tung Oil (C.W.O.)	228.0	30.0
Mineral Spirits	328.0	50.5
Driers (1)	5.4	0.59
Total	661.4	91.72

Charge all the resin and 75 per cent of the oil to the kettle and bring the temperature to 210 C in 25 minutes. Raise the temperature to 270 C in 8 minutes. Heat from 270 C to 292 C in 3 minutes, and then add remaining 25 per cent of the oil. Hold the temperature to 260 C for 9 minutes, then turn off the heat. Cool to 232 C and add the mineral spirits and driers. Cool to room temperature.

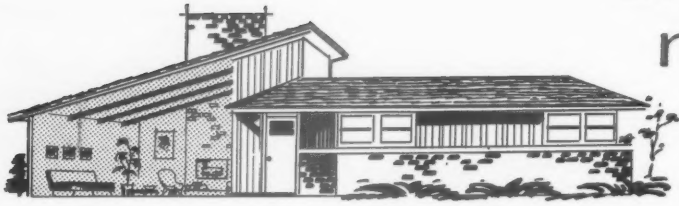
Aerosol Varnish Formulation	Per cent by Weight
Spar Varnish	25
Acetone	25
"Genetron" 12	50

Typical Film Characteristics

Varnish is tack-free within 45 minutes and completely dry in 6 hours.

(1) 0.3 per cent lead, 0.04 per cent manganese, 0.02 per cent cobalt calculated as metals based on the weight of oil.

Divisions of Allied Chemical produce the following components: "Genetron" propellants, General Chemical Division; "Plaskon" resins, Plastics and Coal Chemicals Division; and antioxidants, National Aniline Division.



a new concept in DRIERS

MELETEX

INCREASED SCRUB RESISTANCE OF DRIED FINISHES · INCREASED HARDNESS IMPROVED RESISTANCE TO WATER SPOTTING · IMPROVED RESISTANCE TO MINERAL SPIRITS · IMPROVED GLOSS AND COLOR RETENTION OF BAKED FINISHES · IMPROVED TRANSPARENCY OF CLEAR FILMS · FREEDOM FROM PINHOLING AND PITTING

WATER DISPERSED DRIERS FOR WATER DISPERSED PAINTS

Harshaw **MELETEX** Driers* represent an entirely new and novel concept in the drying of water thinned paint films.

Harshaw **MELETEX** Driers are the first PRE-DISPERSED Driers ready for immediate use—FREE OF VOLATILE SOLVENT—on the market. Completely compatible with all commercially available latexes, these driers offer distinct advantages over those previously used in the water paint field. Consisting of extremely fine dispersions of naphthenates in special aqueous media, these driers impart many desirable properties to water thinned paint films.

Write for Meletex folder furnishing complete information.

*Patent Pending

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THE HARSHAW CHEMICAL CO.
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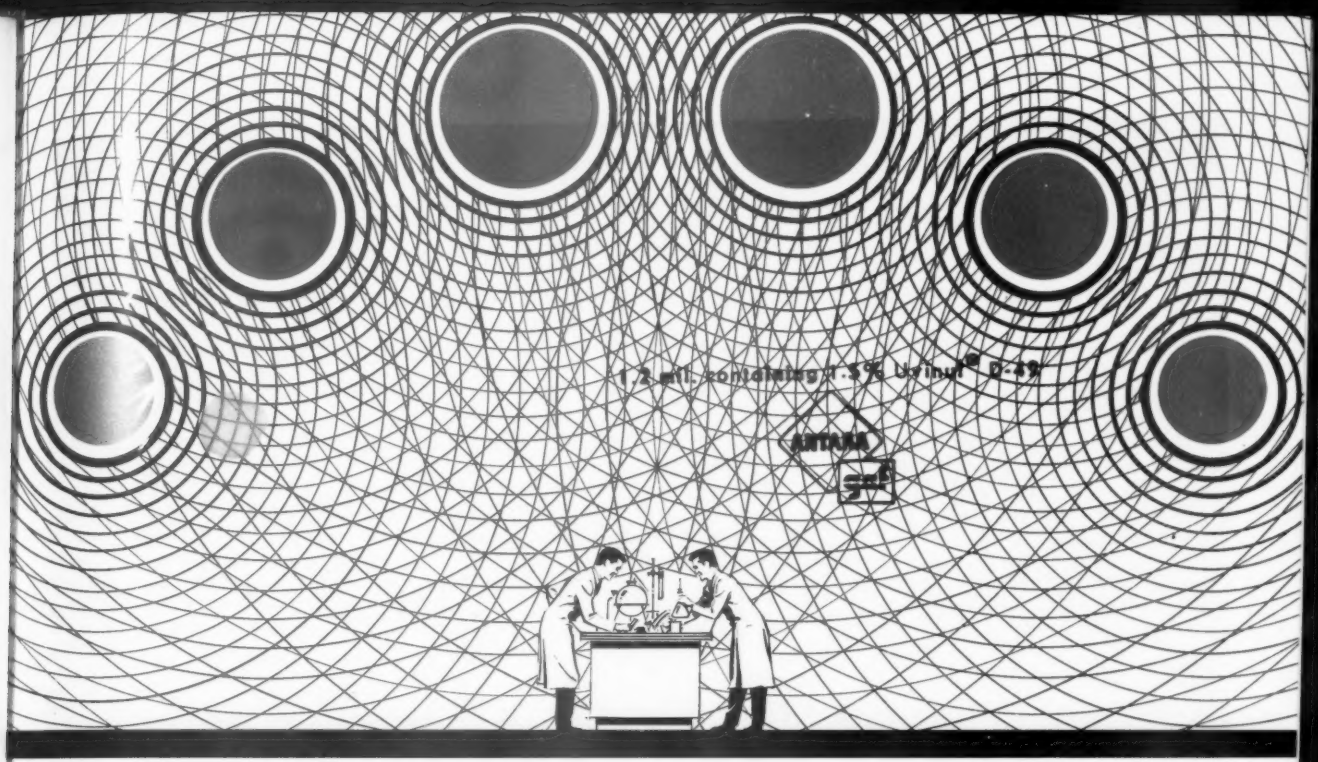

TEST

THE PROTECTION OF

UVINUL®

ULTRAVIOLET LIGHT ABSORBERS

The attached acetate sheet contains Uvinul D-49. Make your own test to demonstrate the positive protection afforded by Uvinul ultraviolet absorbers.

This test consists of —

1. **Exposing your product to ultraviolet radiation while a portion of it is protected by the filter sheet, and**

2. **subsequently noting the superior condition of the protected portion.**

Advantage of the test is that it can be set up in less than 10 minutes — no complications of formulation are involved.

FILTER TECHNIQUE: Cover a portion of the surface of your product with the filter sheet and expose the whole surface to ultraviolet radiation (from sun, sunlamp, Weather-Ometer, Fade-Ometer, etc.) long enough to produce deterioration of the unprotected surface. After exposure, compare the protected and unprotected portions, respectively. To prepare a liquid for this test, pour equal portions into two identical, clear glass bottles and wrap one bottle with the filter sheet.

The UVINUL stabilizers currently on the market offer the widest choice of solubility and absorption characteristics available anywhere. Moreover, to extend protection against ultraviolet degradation to as many materials as possible, Antara is constantly developing new UVINUL products. • Additional UVINUL filter sheets, samples, literature and technical assistance are available to you on request. Let us help you prolong the life of your product.

From Research to Reality

ANTARA gaf

ANTARA® CHEMICALS

A SALES DIVISION OF

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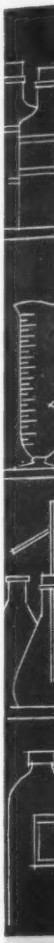
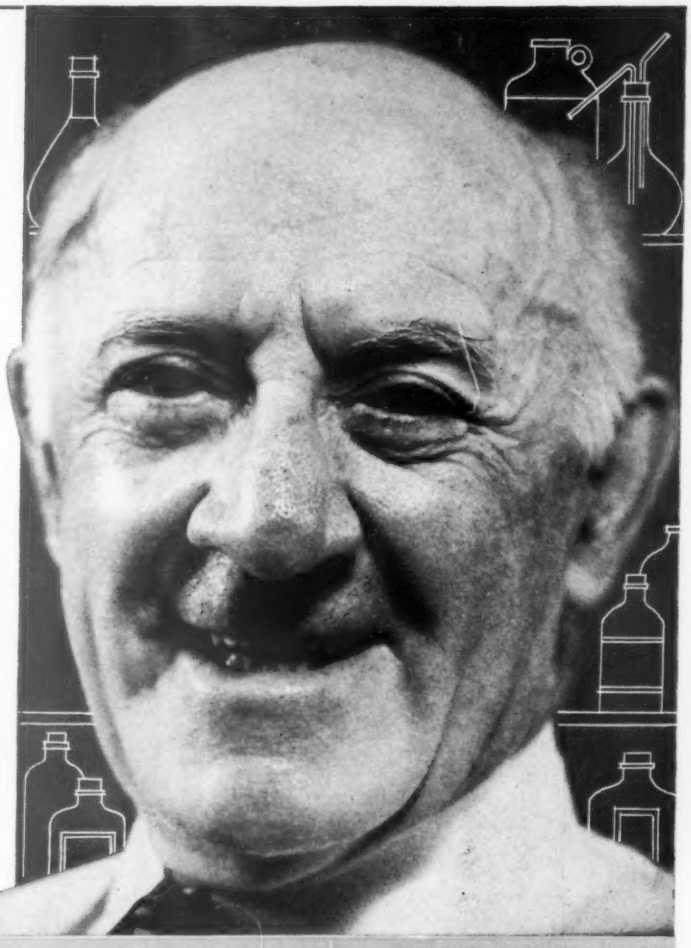
Portland, Ore. • San Francisco • Los Angeles. IN CANADA: Chemical Developments of Canada, Ltd., Montreal



PAIN

"Pleased? Who wouldn't be! 2-NP is a remarkable solvent!"



2-NP is a powerful economical solvent for vinyl acetate—vinyl chloride co-polymers.
2-NP is a preferred solvent in preparation of epoxy resin finishes.
2-NP is a medium evaporating solvent for acrylic resins.
2-NP is a solvent for nitrocellulose and cellulose acetate butyrate.
2-NP offers ideal evaporation rate with high solids, low-viscosity solutions, rapid solvent release, high flash point, mild non-persistent odor and fast cutting time. These are some of the distinct advantages that make 2-NP the solvent of choice for a wide variety of protective coatings.

THE ONLY SOLVENT LIKE 2-NP—IS 2-NP!
Mail coupon for literature that shows what it can do for *you.*

Industrial Chemicals Dept., Commercial Solvents Corp., 260 Madison Ave., New York 16, N. Y.

Please send me the Technical Literature I have checked.

- ☐ "Roller Coat Vinyl Formulations Made with 2-Nitropropane" – Technical Bulletin No. 4
- ☐ "Nitroparaffins As Solvents For Vinylite VYNS-3" – Technical Bulletin No. 6
- ☐ "Cut Costs of Vinyl Solutions with 2-Nitropropane"—Technical Bulletin No. 7
- ☐ "2-Nitropropane As A Solvent in VAGH Vinyl Coatings"—Technical Bulletin No. 10
- ☐ "The Nitroparaffins and Their Uses In Coatings" – Technical Bulletin No. 11
- ☐ "High Solids Vinyl Formulations with Nitroparaffins" – Technical Data Sheet No. 23B
- ☐ "Formulation of Epoxy Resin Finishes with 2-Nitropropane"—Technical Bulletin No. 23C.

NAME..... TITLE..... COMPANY.....

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CSC

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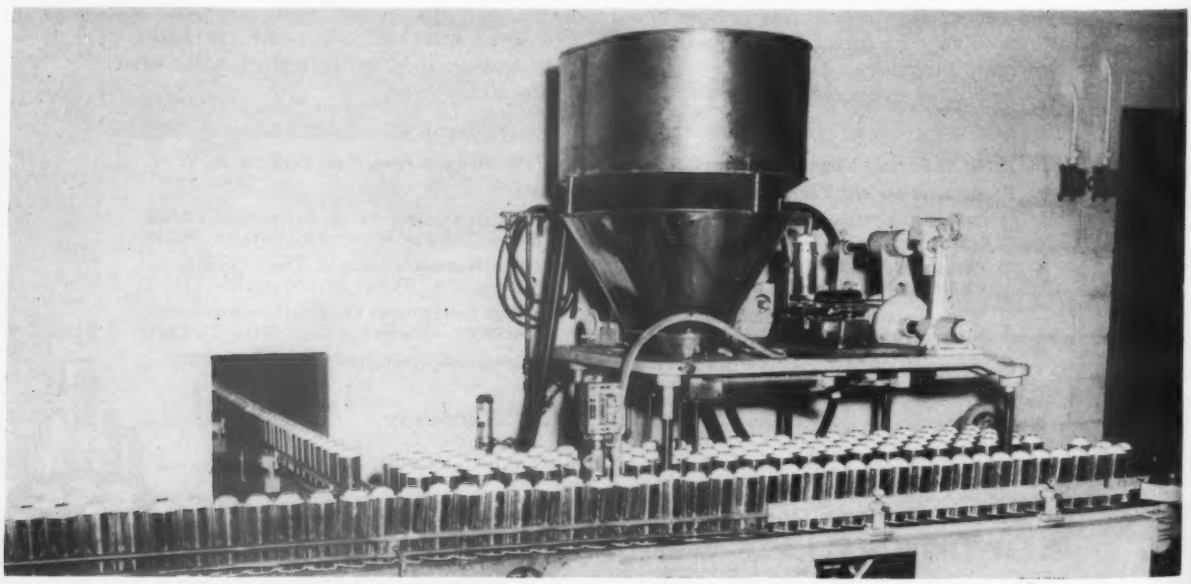
SPRAYON OPERATION FEATURES AUTOMATIC FILLING LINE

IF current industry predictions have any real validity, aerosol paints may soon become one of the largest volume non-food aerosol product types on the U. S. market. The trend to suburban living, which has prompted all of the major paint marketers to introduce pressurized versions of their product lines, coupled with an ever growing "do-it-yourself" approach by both men and women, could easily push the aerosol paint market even beyond some of the more optimistic predictions by paint industry executives.

One company that has figured most prominently in this surge in aerosol paint sales is Sprayon Products, Inc., Cleveland, one of the first custom loaders in the field and a prime developer of aerosol paint formulations for scores of important paint marketing customers. Under Sprayon's tutelage, many companies have adopted the aerosol package as the logical one



Elgin ingredient filler, is enclosed in explosion-proof room. Product is placed into cans, together with an agitator ball.

for special touch-up paints for major appliances, marine engines, and other industrial and electrical equipment.

Long a pioneer in pigmented aerosol finishes, over the past few years Sprayon has branched out into waxes, lubricants, silicones, antifogging liquids, paint removers, clear plastic sprays, engine degreasers, oils, and many more household, industrial, and general products. The five filling lines of the company also have been used for room deodorants, shaving creams, pharmaceuticals, and some of the other more commonly known aerosol product types.

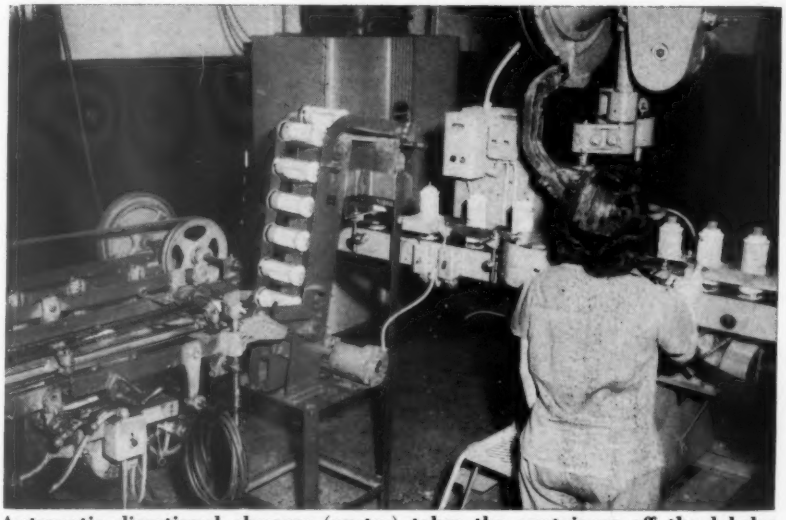
One recent Sprayon development is not a true aerosol package at all—but a hybrid spraying unit which depends on a replaceable can of propellant to supply the power source. Called the "Jet-Pak" spray gun, this unit sprays paint, polishes, cleaners, insecticides — in short any liquid that can be diluted enough to use in a conventional paint sprayer—all with no compressor, hose, or electric wire.

Founded by current president John G. Ellis in 1949, Sprayon started operations with one filling line, three workers, and 200 square feet of plant space. This first line was mainly "home-made"; that is, it consisted of conventional filling units rebuilt for aerosol use, plus Sprayon-designed charging and crimping equipment. Over the last ten years, Sprayon has been expanding onto adjoining industrial property and presently occupies more than 80,000 square feet of manufacturing space; plus nearly 20,000 square feet more of warehouse space. The labor force now totals more than 150. A second filling line was added in 1952; a third in 1954; a fourth in 1956; and the fifth in May of this year.

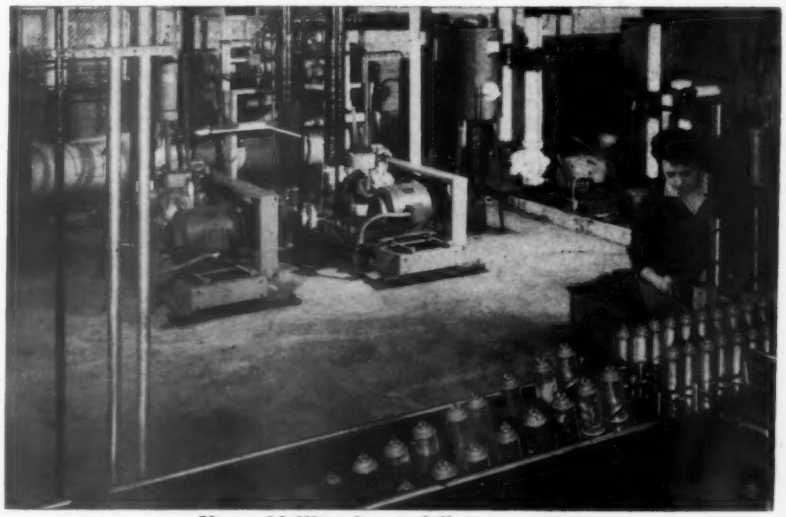
This new filling line is especially noteworthy, since, with the exception of the valve inserting operation, it is fully automatic. Many operations hitherto done manually, such as actuator button application and turn-over prior to labeler feeding, are now performed on special equipment designed by the company's engineering staff.

To reduce the possibility of fire or explosion, the mixing and ingredient-filling operation is com-

Laboratory assistant codes paint samples to facilitate future reorders; other assistant codes formulations.



Automatic directional changer (center) takes the containers off the labeler (left) and places them upright so they can be capped (right).



New cold filling line is fully automatic.

pleted in a carefully ventilated, explosion-proof room. Here the product is mixed, fed into an Elgin filler, and then placed in the cans, along with an agitating ball.

Next the ingredient-filled cans travel by conveyor through a port into the main aerosol handling room, where an Alpha-Colton rotary crimper crimps the valve mounting cup and another Colton unit, a rotary gasser, charges the cans with propellant. From there, the cans proceed automatically through the water bath to Sprayon's own actuator inserter, through the automatic labeler, the Consolidated Packaging Machinery capper, and finally to an automatic cartoner.

Queried as to why he chose pressure filling for a high-speed paint line, Mr. Ellis said that the new line is geared mainly for small-size orders, in which Sprayon has specialized since its inception. "The entire line can be changed over from one color to another, or from one formulation to another, in about five minutes. This obviously gives us far more efficiency, less shutdown time, and less waste of working time by the line personnel. For large volume orders we use an older Mojonnier cold fill line, and for some of the small and large volume work we can use one of the other three smaller filling lines."

In addition to its obvious skills in aerosol equipment engineering, Sprayon's research, product formulation, and quality control section need take a back seat to that of no other company. Over the past ten years the company's staff has developed 10,000 carefully coded and indexed formulations. Each of these is filed away with a color sample, so that the formulation can be duplicated exactly if the customer should re-order years later.

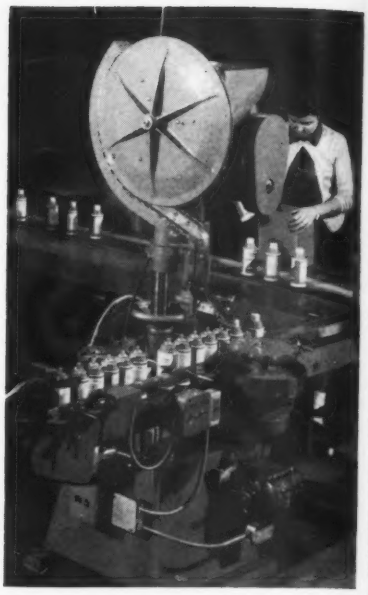
A staff of six chemists and paint technicians works full time in the laboratory, dividing its time between formulation development and quality control. The quality control section studies samples from each filling order, checking them constantly for color stability, consistencey of spray pattern, seeding, etc. To "umpire" in color matching decisions, the technicians use a MacBeth light, a unit commonly seen in the laboratories of major paint manufacturers, but seldom installed in an aerosol laboratory.

Besides this in-plant laboratory, Sprayon has established a fellowship at Cleveland's John Carroll University, where two chemists work on complicated problems of aerosol chemistry and physics.

This combined in-plant and college fellowship research program has successfully recorded a number of aerosol "firsts" for the company. For instance, the company claims to have been the first to package nitrocellulose lacquers in pressurized packages, the first with vinyl compounds, and one of the pioneers of waterbase products. Sprayon has also done much of the initial developmental work on such unusual specialties as stenciling compounds, self-spraying surgical dressings, and daylight fluorescent colors.

Mr. Ellis credits much of the success of the company with all these product types to the "Danvern" aerosol valve, which was developed exclusively for Sprayon by the late J. S. Crowley about eight years ago. Manufacture of this valve makes Sprayon the only filler in the U. S. that still makes its own aerosol valve (Bridgeport Brass did in the early days of aerosol packaging). Mr. Ellis points out: "Because of price factors and limited production, these valves are not sold to domestic aerosol marketers, though we do sell some to overseas firms. It should be mentioned that this valve was developed at a time when domestically produced valves were either unsuitable for our products or hard to get. Both these shortcomings have since been largely corrected, but we continue to produce the valve because it has proved superior for protective coating formulations."

Sprayon's services to the customer doesn't end after the firm develops the formula and packages the product. The company makes available a variety of sales and marketing aids for the promotion of the product, including a sound movie on how to use aerosol paints —plus a wide variety of promotional brochures and bulletins.



After capping operation, cans are carton packaged.

Mr. Ellis is a firm advocate of aerosol product promotion, and deplores the current trend toward price cutting among fillers and marketers. "With a few exceptions," he declares, "there is no spray paint advertising in national magazines or on television programs—despite the fact that this is a good selling product marketed by national companies with substantial advertising budgets. Price cutting all along the line has served to eliminate advertising and other promotional expenditures that might go far toward selling paint products to an ever increasing number of new customers. Current price cutting trends among aerosol custom fillers make little sense, and our company has always put quality control procedures and high quality filling techniques ahead of the price considerations."

This policy appears to be paying off, for Sprayon Products is prospering. Besides the shining new automatic line, the company has plans in process to build a brand-new plant on the outskirts of Cleveland. It is in the process of organizing a New York and a Chicago sales office to better serve its customers in those areas. And, what is probably most important to future growth of the industry, Sprayon is expanding its role as a recruiter of new volume customers to aerosol product packaging.

How the "magic touch of aerosol packaging" can work "sales magic" for you!

In just two years, aerosol paints have shown a phenomenal 158% increase in sales! And these record-breaking sales are just a drop in the paint bucket compared to potential!

Aerosol Paints Claim a Fast-Growing Home Market!

At home, "do-it-yourselfers" find aerosol paints for small jobs are neater, easier to apply, do the job faster. Last year, these advantages helped sell a total of 55 million cans valued at $71.5 millions*. . . a spectacular increase over $46.9 millions in sales for 1957! And the potential sales market for standard aerosol house paints is estimated at 242 million units per year! Also, there's a fast expanding market for acrylic resins and lacquers . . . and specialty coatings such as multi-color, speckled-type paints.

How General Chemical Can Help You

As a leading producer of aerosol propellants, General Chemical has developed extensive market information on present and anticipated aerosol paint sales. We will also direct you to highly capable contract fillers, who can put up small runs for you or handle full-scale commercial production. These contract fillers will work with you from planning and testing through to volume filling. They can get you into the aerosol coating market quickly and efficiently—*without any outlay on your part for plant, special equipment or personnel!*

For further information—or to arrange a special presentation on the aerosol coating market—write today to "Genetron," General Chemical Division, Allied Chemical Corporation.

*Estimated by Market Surveys Dept., General Chemical Division, Allied Chemical Corporation

genetron®

aerosol propellants

Putting the "push" in America's finest aerosols

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40 Rector Street, New York 6, N. Y.

NEW FROM CONTINENTAL:

Major step forward in Pressure cans

Continental perfects "PRESSURE TAB" side seam with improved soldering method. New can permits higher pressure than any other 3-piece aerosol.

Continental's improved aerosol can represents a major step forward in this rapidly expanding industry. Here is an aerosol container that *really* takes pressure—more than any other 3-piece can being manufactured. The can's unique pressure tab side seam, together with Continental's improved soldering method, form greater bond stability—and that means higher pressures than ever before possible.

But that's not all—The new can provides greater protection over longer periods...holds higher pressures at elevated storage temperatures...increases the range of propellent mixtures useable in pressure containers...paves the way for expansion in the aerosol industry.

For the full story about how you can benefit by using this new aerosol, get in touch with your Continental representative today.

METAL CANS SERVING MAN FOR 150 YEARS • 1810-1960

CONTINENTAL CAN COMPANY

Eastern Division: 100 E. 42nd St., New York 17
Central Division: 135 S. La Salle St., Chicago 3
Pacific Division: Russ Building, San Francisco 4
Canadian Division: 790 Bay Street, Toronto 1
Cuban Office: Apartado 1709, Havana, Cuba

LABELING AEROSOL PAINTS

DIRECTIONS FOR USE

BEFORE YOU START:

- Surface must be clean and dry . . . free of grease, rust, dirt and wax.
- Material should be sprayed in well ventilated area.
- Bare metal should first be primed with Shade-Glos primer.
- Warm spray can to room temperature by submerging in luke-warm water for 5 minutes.
- Shake can so that the ball inside will stir material.
- Protect other areas from overspray.
- Practice briefly on some other surface.

WHEN SPRAYING:

- Press valve hard with forefinger.
- Hold can about 12 inches from surface.
- Apply with light even strokes closing valve completely at end of each stroke.
- Use sparingly in light mist coats. Allow to become tacky between coats.
- To use entire contents, tilt can, hold spray-head, and rotate can.

AFTER USE:

- Turn can upside down and spray short jet of clear gas to avoid clogging.
- Valve may be pulled off for cleaning if necessary.

WARNING . . . FLAMMABLE. Keep from flame including pilot lights. Keep under 100° F. Contents under pressure. Do not puncture. Do not burn can, even when empty. Avoid prolonged or repeated breathing of vapors and contact with skin.

ZINC CHROMATE PRIMER
MEETS GOVERNMENT SPEC MIL-P-6889A and MIL-P-8585

Pigment	11.8%	VEHICLE:	
Vehicle	9.8%	Linseed Oil Alkyd Resin	80.2%
Aliphatic Hydrocarbons	28.4%	Phenol Aldehyde Resin	18.2%
Halogenated Hydrocarbons	50.0%	Maleic Anhydride	1.2%
	100.0%	Metallic Naphthenate Drier	.4%
PIGMENT:			100.0%
Zinc Yellow	85.1%		
Magnesium Silicate	14.9%		
	100.0%		

THE importance of carefully considered label design cannot be emphasized enough in the aerosol field. Many excellent aerosol products have fallen by the wayside simply because the labels exaggerated the claims or failed to provide adequate usage instructions. Packaging experts will insist that any label be designed to fit the package and to enhance the merchandising appeal of the finished package. . .and most certainly this is true of aerosol labels *BUT* in addition, aerosols MUST be treated differently because the consumer is not familiar enough with them yet to use them properly. Let's face it, aerosols are not yet fool-proof, so your label MUST make up for this deficiency—at least in part. The several additional functions to be played by your aerosol paint label MUST be carefully worked out to accomplish the sales volume you anticipate.

Bearing in mind that repeat sales will fail to materialize if customers are not satisfied, let us examine some of the limitations of an aerosol paint to determine how it affects the preparation of the label.

Avoid Exaggerated Claims

An aerosol protective coating is a mixture of a relatively dilute or "thin" paint (in terms of solids content) and fluorocarbon propellents. Therefore, it is not likely to accomplish miracles with respect to covering power. DON'T let yourself be trapped into claiming to cover 500 square feet when your product will cover only 100. If your label tells about spraying window frames, the best way to put your message across with respect to "mileage" is simply to state that this container will cover 10 (or whatever) frames once when used as directed, or 10 radiators, etc.

Shake Thoroughly

Consider what happens to the pigment in a thin paint, particularly when it is still further diluted with propellent. Yes, it settles, and no one has come up with a perfect aerosol paint dispersion. Make sure, then, that YOUR customers will not miss the instruction to shake well enough to hear the mixing ball hit all sides of the container to insure adequate mixing.

Prepare Label to Match Formula

The paint mix, or "concentrate"

as it is termed in the aerosol industry, must be compatible with the propellents. The pigments must not be adversely affected after long periods of storage, nor can they be allowed to settle so hard that normal agitation fails to disperse them properly. They cannot agglomerate in this relatively new environment (for paint pigments, that is) or else they will clog the valve. While these problems are formulatory, they are mentioned because the ingenuity of your paint chemists will be taxed to the fullest just to come up with a good aerosol paint—don't impose the additional impossible burden of suiting the product to fancy label copy. Rather, suit the label to your product after it has been carefully tested.

Clear Valve After Using

The orifice in a normal aerosol paint product is only 0.016 inches in diameter at the maximum. After you have devised a formula that will not clog this tiny space, consider what happens when the paint resin is allowed to dry in the air space between the orifice and the business end of the valve button or spray head. Naturally, it solidifies and clogs the valve, and the dried resin is difficult to dislodge even with a pin. . .and if you are not very careful with the pin, you'll wind up with paint on your face! So simply tell your customers—so that they cannot possibly miss it—that they MUST clear the valve after using by simply inverting the can and actuating the valve until no paint appears. . . just gas or colorless propellent.

Avoid Overspray Complaints

As a professional, you know how to guard against overspray—and avoid glopping up the area around you. Not so with your new aerosol paint customer—so tell him how! Masking tape. . .a piece of cardboard, template. . .newspapers. . . he may not realize how much help you have been with this message. BUT consider his wrath when the overspray causes him many extra hours of work with your "Time-Saver."

Identify Paint Colors

Consider carefully how you want your customers to identify the different colors of your aerosol paint line. While it will be more expensive to identify these colors with an exact color match on the label for the contents, at least you will not have a dissatisfied customer who has inadvertently swapped colored caps, or is deceived by the "proximate" color of cap or label.

Where to Use

Where can the average customer use aerosol paints to best advantage? Point up, pictorially if possible, such difficult-to-paint objects and surfaces as radiators, wicker chairs, window frames (with masking), porous cement, rough masonry, bicycles, wood and metal work, wire or cane basketry, cane seating, fences, decorative figures, art objects filigre, carts, wagons, screens, shutters and the like. Just remember that each item mentioned or pictured implies a warranty—so test out your product thoroughly!

How to Use

Have you ever seen an amateur during his first tussle with a paint sprayer? Well, then, be sure to document your instructions so carefully that even a 10-year old can follow them! Perhaps—

1. Direct spray outlet at corner of top edge of surface to be sprayed.
2. Push valve down and simultaneously move spray along top edge.
3. Release valve at end of stroke.
4. Direct spray outlet to spot just under the start of first stroke.
5. Push valve down and move spray along the area just under first stroke, releasing valve at end of stroke.
6. Continue with this spray technique moving down over object until it is covered from top to bottom.
   NOTE—Usually one coat is sufficient, but a light color over a dark color may require a second coat after the first has dried (10 minutes). Practice first on an old piece of wood or cardboard to develop this craftsman technique. . .you will find it most economical of the paint, and will avoid runs or bare spots so common to the beginner.

Protect Against Damage Claims

Every manufacturer knows for a fact that NO customer ever stops to read the label. . .until he's in trouble, then he tries to find every possible loop-hole in the label so as to sue the pants off the manufacturer! So be careful what you say, how you say it, and where you say it on each label!

Don't forget that aerosol products are under pressure and that most of the common paint solvents are flammable. Accordingly, it is recommended by several trade associations and governmental agencies that precautionary statements be made to protect the consumer—and to protect the merchandiser from costly liability claims.

Use Common Sense

The limitations described above should not be interpreted as an exposè of aerosols, but rather as a collection of undeniably important considerations in pleasing the customer—and thus increasing the acceptance of your product. Remember your repeat sales are based on leading rather than misleading your customers. Avoid over-optimistic claims or fancy designs that exclude important instructions. Let good common sense be your guide in handling these limitations.

Label Functions

Directions

The most important label function for an aerosol paint product is to provide such carefully stated directions that your customers can't help but use the product properly. Carefully, clearly-worded instructions are just as important as the formula itself in developing repeat sales. Make the usage instructions and permissible applications the responsibility of your laboratory staff.

Applications

Your label must provide, pictorially if possible, as many tested applications and as many *reasonable* usage conditions as your lab can find. The performance of your product must unquestionably jibe with the copy on your label. Above all, don't try to fool the public into that first sale only.

Merchandising Appeal

So far we have talked about the gloomy side of push-button spray

paints and their labels. Now let's discuss the more glamorous part of the label—the part that helps merchandise more effectively. Note that some of the considerations have been repeated because they not only serve the purposes mentioned heretofore, but also are powerful merchandising aids—or stumbling blocks—depending on how well you handle them.

FIRST, your customer wants to know at a glance just what the product *is*! Paint? What kind? What Color? Polka-dot? Enamel? Lacquer? Be sure that your color is identifiable visibly on the label . . .a band, swatch, and/or a number.

SECOND, what are the advantages? Does it save time? save money? Is it easy to use? Note the following disadvantages. How many can you squeeze onto your label?

1. No opening of a paint can.
2. No thinner needed.
3. No mixing, other than a few seconds of shaking.
4. No messy mixing paddles.
5. No brushes or brush clean-up and storage.
6. No time-consuming brush stroking.
7. Difficult-to-brush surfaces and objects are spray painted much faster and more effectively than with a brush.
8. Drying time is usually much less than with brush-type paints.
9. Even when masking is required (as on window frames), it is still easier and faster than with a brush.
10. Many inaccessible spots can be reached with a spray which cannot even be touched with a brush.

NOTE — some dyed-in-the-wool paint experts complain bitterly about the high cost of paint aerosols vs. conventional paints. Some one of these days, they will find that the small size paint cans are completely superceded by aerosols, let's say up to and perhaps even including the quart size.

THIRD, what will the product *do*? How long will it last? Is a single package enough to do the whole job? How many square feet will it cover? How many radiators will it paint? Can it be used outdoors as well as indoors? Will it affect the surface being sprayed. . . if so, how? what do I do about it? Can I paint over it? How do you remove it from your hands or clothing? Are any auxiliary devices needed to do a better job (masking tape, etc.)? Customers want answers to these questions. . . don't leave it up to the clerk in some store to mis-answer these all-important questions for you.

FOURTH, where is it used? If you don't say it on the label, many customers just won't try it. Just make sure that it works, or you will have complaints.

FIFTH, how is it applied? Directions again.

SIXTH, what guarantee do you offer for satisfaction? Here again your laboratory staff is on the spot, and the only answer is thorough and careful testing before you sell a single can or start to prepare your label.

Technical

The fourth major function of the aerosol paint label might be described as the technical function. Here the regulatory requirements, precautionary statements, design and label specifications must be considered.

1. Check the Interstate Commerce Commission regulatory requirements. Pennsalt Chemicals Corporation has carefully documented these regulations in tabular form, and they will serve as a handy reference guide.
2. Check the requirements for labelling aerosol paints with respect to composition. For example, the State of Virginia requires the composition of aerosol paints to be stated on the label. Lead and arsenic are restricted to maximum tolerances. Obviously, you must conform to such regulations.
3. Write to the Chemical Specialties Manufacturers' Association, The Compressed Gas Association, the Federal Trade Commission, and the Bureau of Explosives for further information concerning regulations and recommendations for labelling aerosol paints.
4. Most aerosol labels contain precautionary statements which read—"*Contents Under Pressure. Do Not Puncture. Do Not Incinerate. Do Not Heat Over 120°F. — (or) — Keep at Room Temperature—Away From Radiators, Stoves, Direct Sunlight.*"
5. The City of New York requires special Certificates of Approval for all flammable products—and aerosols are no exception.
6. Consider the contents statement, label design to show as many pictures as possible, label specifications (including *EXACT* dimensions for width, height, glue lap, inking area, varnish area, etc.). Consult carefully with your contract packager or your production superintendent on label specs because these labels must be handled by some of the most obstinate and exasparating labelling machines you've ever seen—and a little time spent on obtaining *exact* specs and following up the printer to insure this exactness will save hours of expensive downtime on the filling and labelling lines. For example, the grain of the paper label must be vertical or it won't wrap around the can properly.
7. It goes without saying that the label must fit the container, but unless someone is made responsible for coordinating the packaging problems, the Sales Department may just happen to request a change in the shape of the container. . . and there's just nothing you can do with labels that don't fit—'cept throw them away. Eventually, the easiest and best way of labelling is lithographing the cans—just be sure that all the "bugs" have been worked out of the label before you have a few hundred thousand improperly labelled containers on your hands.

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Specifications on National Adipic Acid are explicit on both color *and* heat color as well as purity . . . the critical factors in making light-colored resins, plasticizers, alkyds and other esters. Every shipment meets or exceeds these tough standards:

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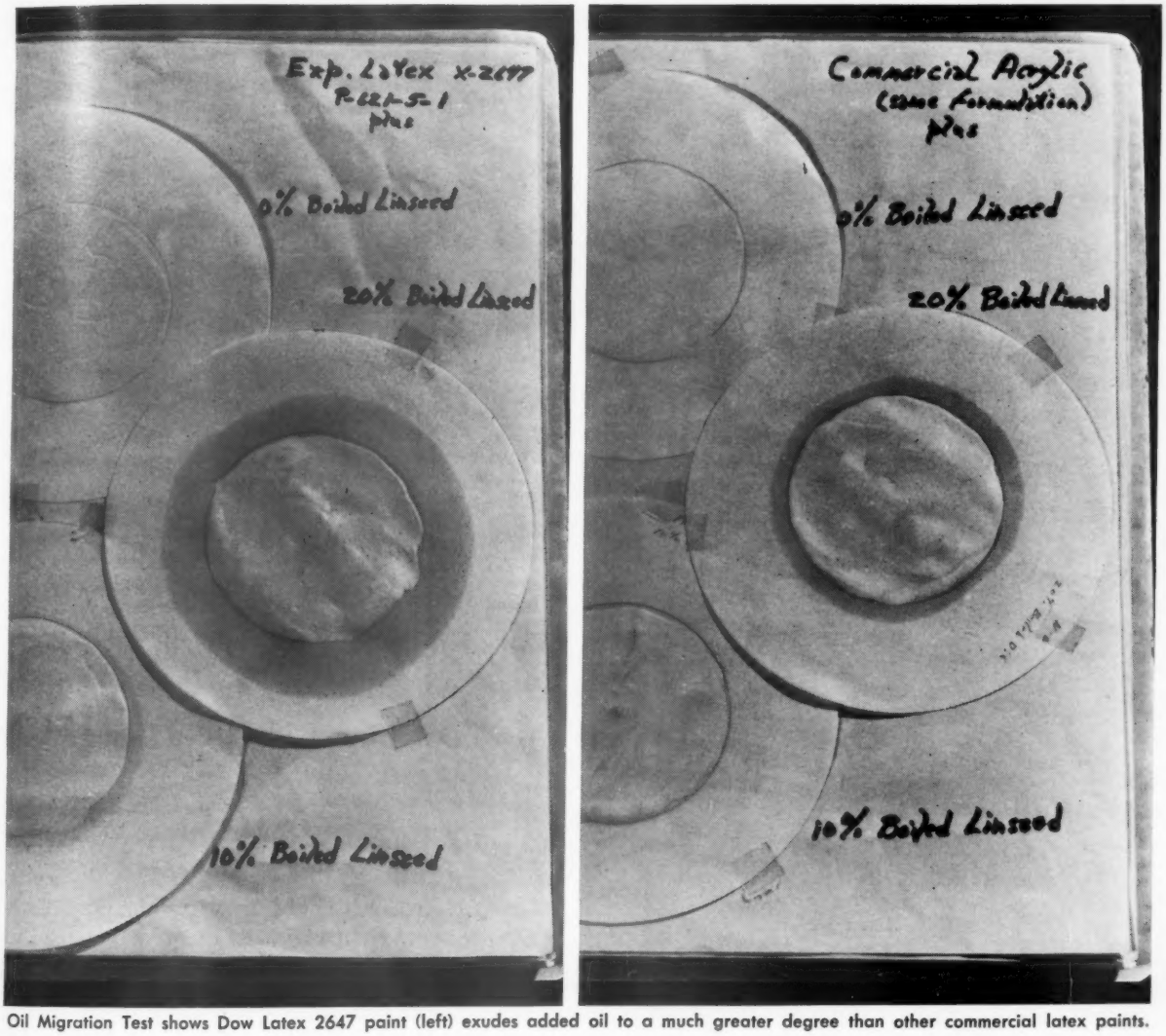

Oil Migration Test shows Dow Latex 2647 paint (left) exudes added oil to a much greater degree than other commercial latex paints.

NEW DOW LATEX 2647 PAINT FILMS STAY "TIGHT"

even over heavy oil paint chalk

New Dow Latex 2647 and a special technique used by Dow Coatings Technical Service laboratory solve a problem faced by every manufacturer of repaint finishes for exterior wood. The problem: poor adhesion over heavily chalked oil paints. The answer—oil modified paints made from Dow Latex 2647.

Repaint finishes made from this new Dow latex show excellent adhesion over badly weathered oil paints *when 10-20% of drying oil, such as boiled linseed, is stirred into the first coat of latex paint.* It may be simply paddle-mixed by the dealer or painter, or it can be added as a last operation during manufacture of the paint. The oil/latex mixture is compatible. Slight separation may occur during shelf storage, but the oil remixes easily on hand stirring.

As the oil-modified Dow Latex 2647 paint dries, the latex particles coalesce and force the added oil out of the film. Oil forced to the surface does not affect adhesion of subsequent topcoats. And the oil forced out *beneath* the repaint film wets out and migrates into the chalk, firmly binding the new latex film to the unweathered surface of the previous oil paint. The second coat of paint does not contain oil.

Oil-modified repaint finishes are an important part of Dow's all-latex system—primer, topcoat, and repaint finishes—for exterior wood. For more information, or for assistance in formulation, write THE DOW CHEMICAL COMPANY, Midland, Michigan, Coatings Sales Department 1907DL5.

See "The Dow Hour of Great Mysteries" on NBC-TV

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You'll find Canco experience in the field of aerosol packaging is unsurpassed. A call to your Canco salesman will put this skill to work for you and your product.

CANCO Division **AMERICAN CAN COMPANY**

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HOW TO MANUFACTURE *FOOLPROOF* AEROSOL PAINTS

By
John J. McAnally*

THE label on a Krylon aerosol container bears easy-to-read instructions on how to apply this spray paint to get the job done right. Unfortunately, we have learned that a great many consumers do not read labels.

We, therefore, consider it axiomatic that an aerosol paint be so foolproof a product that even the user who simply follows his own good instincts would still get good results.

On the other hand, the professional or skillful do-it-yourselfer won't put up with the slightest shortcoming in terms of sagging, hiding quality, container pressure, spray character, drying time or color characteristic.

In other words, an aerosol paint must perform satisfactorily for a wide variety of users.

We believe that today's spray paint meets these broad requirements, and is earning growing consumer acceptance, and the continued rapid increase in annual sales, attests to this.

Quality Control

In this brief article, I want to describe the types of in-plant testing quality control, and production techniques that have contributed substantially to the share of success that we have had in manufacturing and marketing the Krylon line of spray paints.

Field Testing—Krylon, before making any arrangement with a supplier of aerosol parts, thoroughly inspects the supplier's plant to assure that proper quality controls are being exercised there. The supplier's product also is subjected to intensive testing in the Krylon laboratory. As a follow-up measure, we send technical people to inspect his plant periodically to be certain that the proper controls are being maintained.

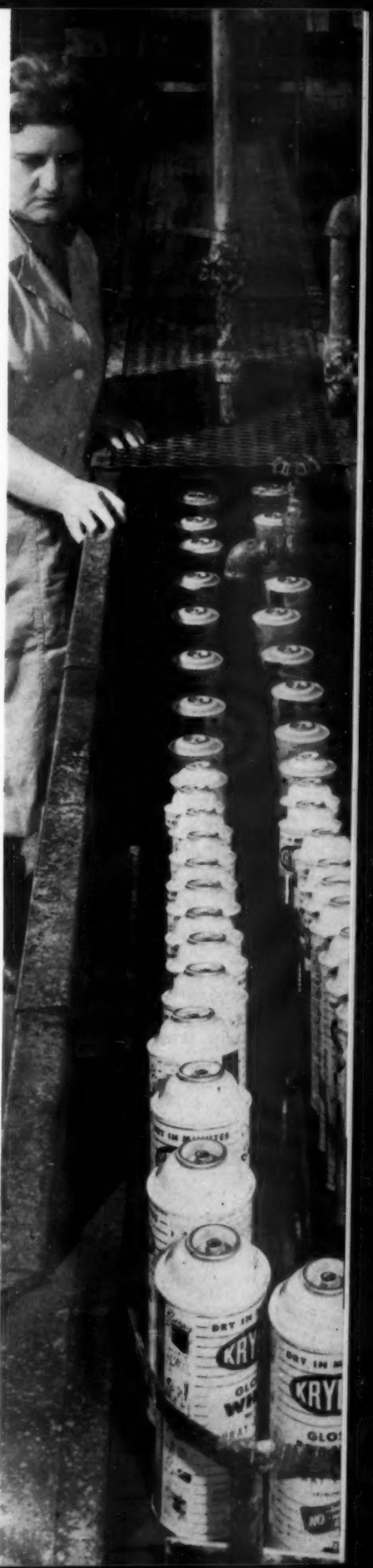
A supplier's lapse usually shows up first on our production line. . . a slightly increasing percentage of cans with leaky seams, for example, or of valves whose metering orifices measure off the specified diameter. On discovering such a trend, we contact the supplier immediately and work with him to iron out the difficulty. This practice usually brings performance back to the required standard promptly.

Filling—On our production lines, valves are withdrawn at random, and their metering orifices measured with an ocular micrometer. Cans are similarly sampled, using a micrometer to measure diameter of the neck. Both tests are made by our laboratory technicians.

We use only glass marbles for agitation of the packaged paints, one to each can. This is an extreme, since our paints are noncorrosive and no damage would likely occurr had we used metal agitators. We just like to be absolutely certain the quality of our products will be preserved on the shelf.

All pigmented products are continuously agitated by circulation through a closed system. Concentrate is drawn from 55-gallon

*Ass't. to President, Krylon, Inc.



Cans seen emerging have been given hot water bath test. Units failing ICC specifications are rejected.

Left: Push button is examined under powerful microscope. Right: Torque test determines whether valve body and can have been crimped together tightly enough to satisfy specifications.

drums just outside the main building. A pump continuously circulates this material from the drums, through lines running into the building, to the concentrate filler in the production line, and back out to the drum. This measure prevents settling of the pigment and ensures the delivery of a uniform composition of concentrate.

On the production line conveyor, an automatic coder stamps the bottom of each can as soon as it begins to advance. This is an important quality control measure since it precludes the possibility that a stencil ink, for example, will be labeled, boxed, and sold as red paint.

Random units are drawn from the line after the valve bodies have been crimped into the necks of the cans. A torque test is applied to determine whether the seal is tight enough to satisfy specifications.

Weight Checks — Once concentrate and propellant are loaded, cans are weighed on a scale at a weigh station, after being automatically compensated for tare. There, an operator records variations. Results are evaluated by statistical methods. If a variation is statistically significant—indicating a reasonable probability that the loading is off standard weight—the units in question are rejected, and an adjustment of loading equipment is made.

Bath Operations—In accordance with regulations of the Interstate Commerce Commission, all loaded and sealed units are immersed in a hot water bath. Cans are carried through the bath automatically by a conveying line. Bath temperature is maintained at 130°F. An inspector, stationed at the end of the bath where the cans emerge, rejects leaky or otherwise defective units.

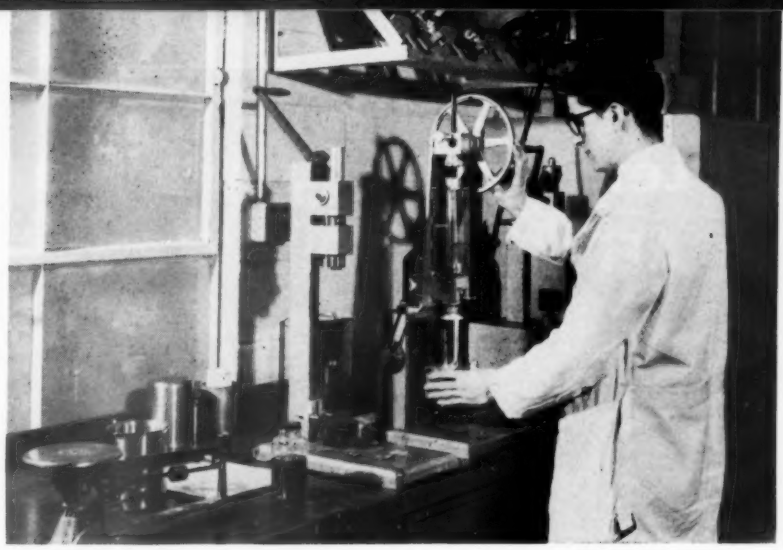
Leaving the bath, the cans pass under a jet stream of air. Retained water is blown away. This anti-corrosion measure is especially important to the valve inset, where a small pool of water usually remains.

An automatic spacing device arranges the open cans for perfect centering under a spout which discharges the concentrate. Due to the viscosity of the paint, however, one or two drops occasionally linger before dropping, striking the shoulder of the can as it begins to move off to the line's next station. The operator, who also inserts push buttons on the valves, inspects for such spillage. Cans with spillage are detoured to a table where another operator cleans them with brush and solvent; then they are returned to the production line.

Flushing Operations—The Krylon line of spray paints includes acrylic based coatings and nitrocellulose based lacquers offered in 24 colors. The comprehensive nature and diversity of the line poses a formidable production problem. For

Ultimate test is to get into frame of mind of a consumer and just try it out. Technician's years of experience enable him to sense at once any imperfection in pressure, spray pattern, hiding quality, color.

Code identification on bottoms of cans is checked by inspector. Two wheels riding over shoulders of cans passing just in front of inspector's hands hold cans firm while automatic coder rolls up to print identification on underside.



Developmental work irons out many of the wrinkles—before a new product goes into production—that would have created quality control problems later. Here technician pressure fills a new aerosol under development with fluorocarbon propellant. Device at his left permits technician to crimp valve assemblies into can by hand. Behind him is refrigeration unit for experimental work in cold filling.

example, how do you keep the lines clean and still maintain high productivity?

Whenever possible, we run colors in a sequence that simplifies cleaning operations. We might run white, then yellow, then gold, then green. Between each run we flush the line from the previous run and then pre-flush it with a solvent that is compatible with the paint on the next run. Methyl ethyl ketone is commonly used to flush off nitrocellulose based lacquers, while toluene is most often used for the acrylic based coatings.

Random Sampling—Random sampling is employed at the line's end where the most important of all tests are made. Sample cans are carried back to the laboratory by a technician. Each unit is put through a battery of tests to check on every phase of the containers operation and performance of the products. In these tests, paint is sprayed on a lustrous piece of metal, held up in a screened testing area by a stick with magnets on the end of it.

Shelf Tests—Sample units are also pulled off at the end of the production line at the rate of about one every hour, then dated and shelved. A few from each batch are retained for two years before being taken into the laboratory for thorough inspection and analysis. Others are given the same tests over the two-year period.

Another important form of control is instantaneous and emphatic feed-back from consumers. If a mistake is made, we hear about it right away—and in no uncertain terms. Unfortunately this comes a little late, as far as we are concerned, but it is valuable to us for purposes of self-appraisal and product improvement.

Most complaints, we have discovered, are attributable to improper use of the product. But we carefully investigate all complaints and always make redemption without any question.

Control in Development—In a sense, a great deal of quality control is built into the product and its package during the development stage. Exhaustive testing and inspection procedures exercised during new product development precludes the likelihood that a great many of the mishaps will ever happen.

For example, two years of developmental work may rule out the probability that Product X will ever become too viscous for proper dispensing within the temperature range likely to be encountered. This eliminates the need for viscosity testing when production begins.

Our laboratory right now has literally hundreds of new products under development. Several samples of each are arrayed on laboratory shelves, undergoing continuous testing. These have been made up in the laboratory, where we have special equipment that—on a per-item basis—can do anything our production lines can do.

Left: Statistical methods are used to evaluate any weight variations recorded here when automatic scale indicates them. Right: Ocular micrometer is used to measure diameter of opening through neck of can.

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We Aerosol Package Paint Products under private label *exclusively*.

We will Aerosol package YOUR PAINT or OURS—in large or small quantities, provide the research, product development, manufacturing, packaging and shipping facilities you need—*all at a cost much less than you can do the job yourself!*

You simply furnish the label, WE WILL DO THE REST!

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Eugene L. Learner

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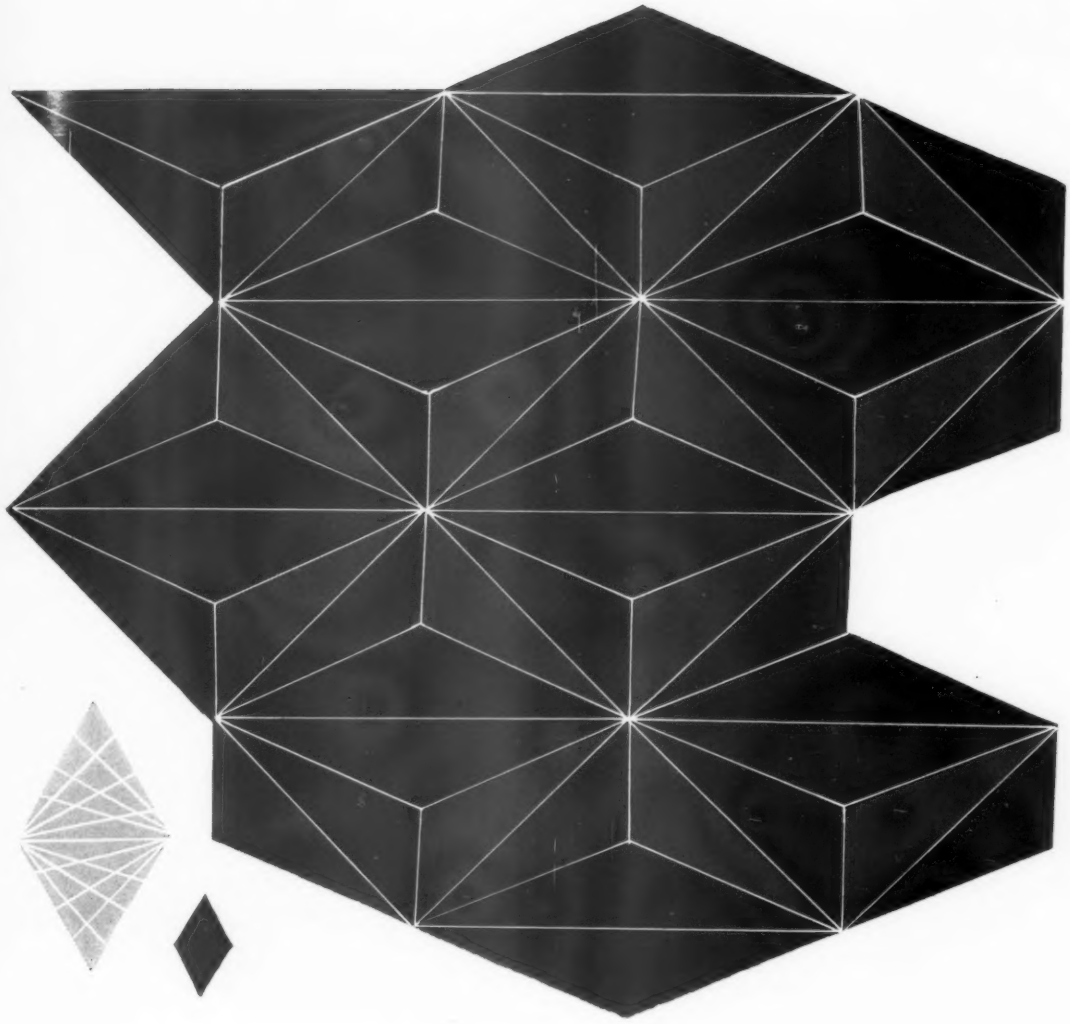

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GRAPHTOL VAT RED 2935-0	70320	BLUISH RED
GRAPHTOL VAT RED 2957-0	67000	BLUISH RED
GRAPHTOL VAT RED 2964-0	68000	DULL RED
GRAPHTOL VAT ORANGE 3913-0	59705	REDDISH ORANGE
GRAPHTOL VAT ORANGE 3933-0	59700	YELLOWISH ORANGE
GRAPHTOL VAT ORANGE 3938-0	69025	YELLOWISH ORANGE
GRAPHTOL VAT ORANGE 3942-0	59300	REDDISH ORANGE
GRAPHTOL VAT ORANGE 3962-0	71105	REDDISH ORANGE
GRAPHTOL VAT ORANGE 3979-0	59300	REDDISH ORANGE
GRAPHTOL VAT YELLOW 4921-0	70600	REDDISH YELLOW
GRAPHTOL VAT BLUE 6547-0	68710	GREENISH NAVY
GRAPHTOL VAT BLUE 6583-0	69825	REDDISH NAVY
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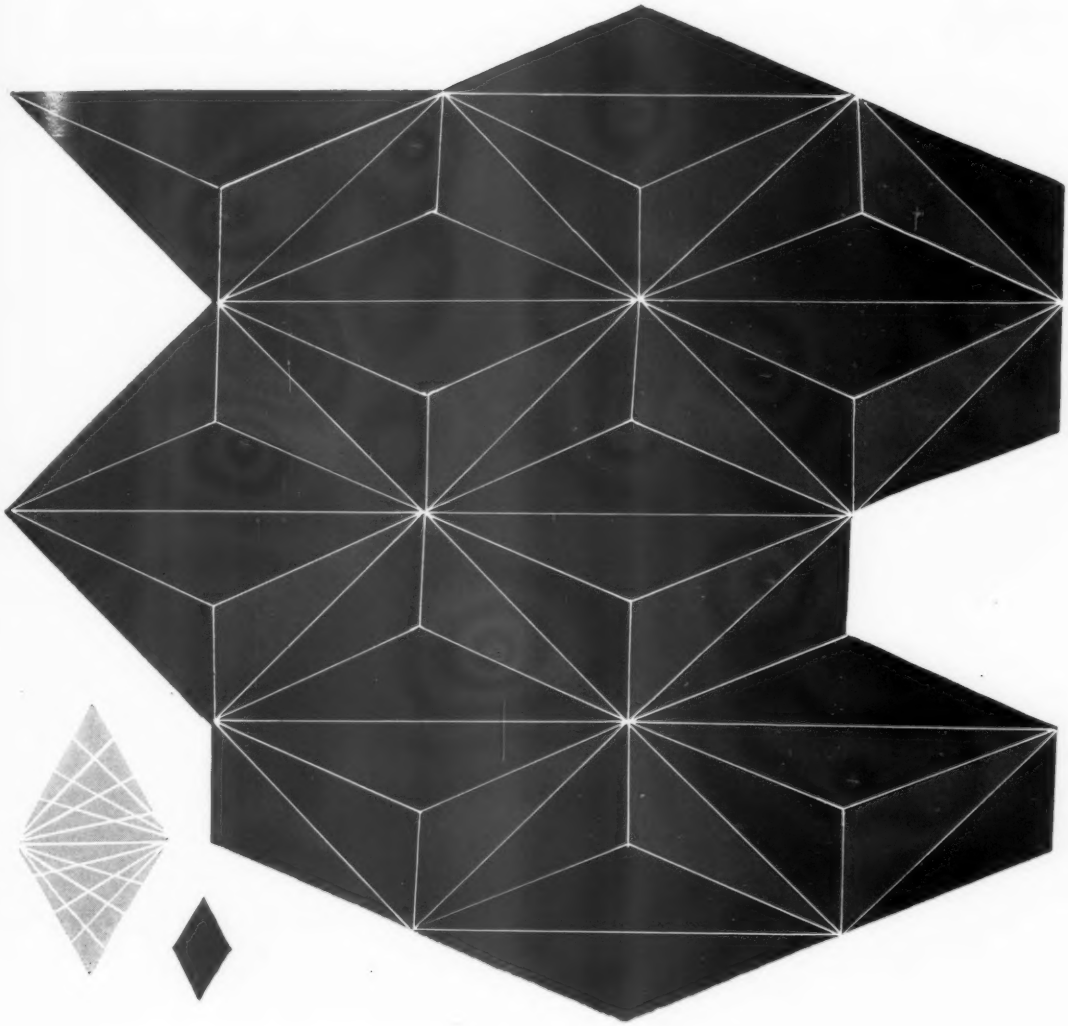

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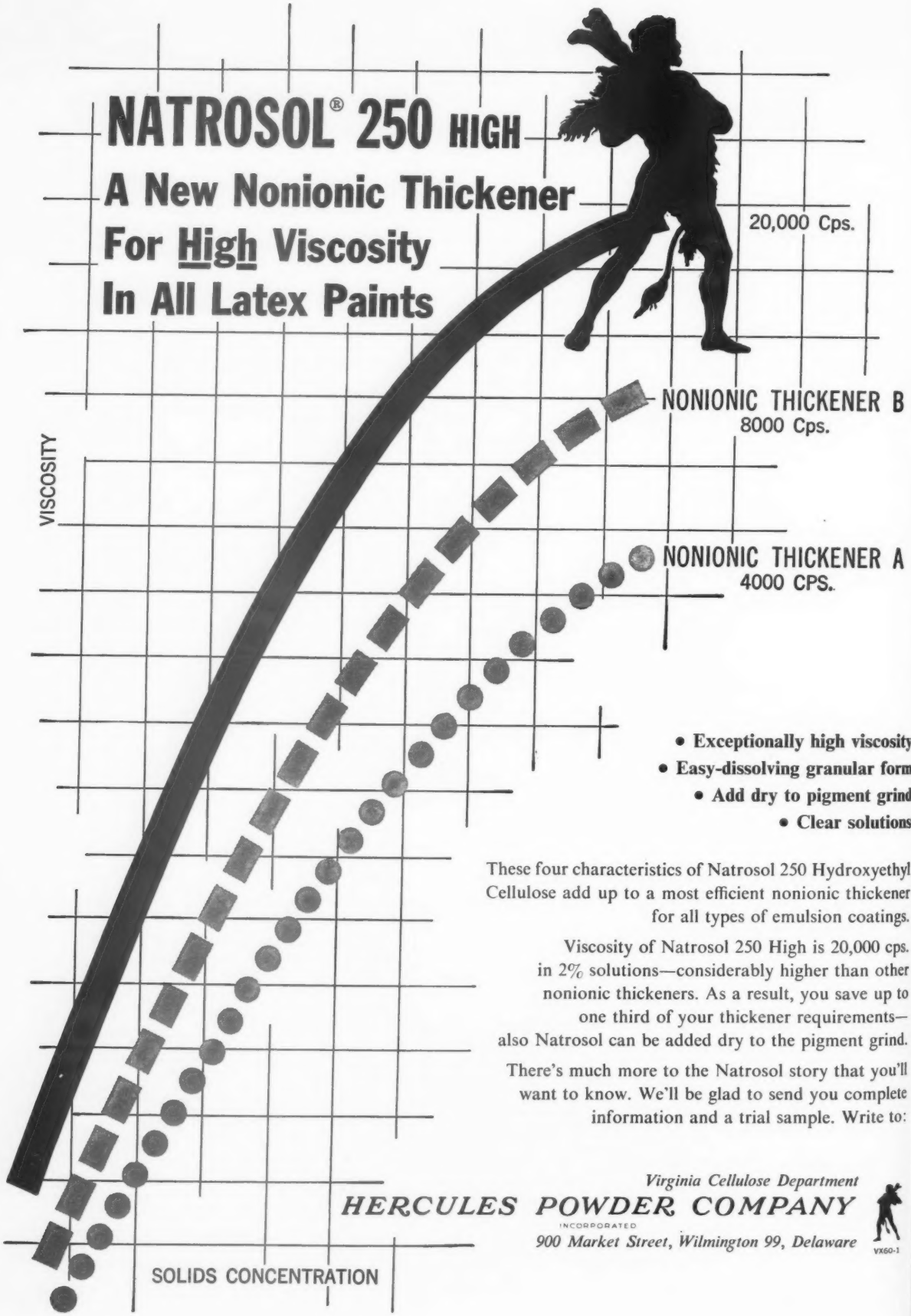

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These four characteristics of Natrosol 250 Hydroxyethyl Cellulose add up to a most efficient nonionic thickener for all types of emulsion coatings.

Viscosity of Natrosol 250 High is 20,000 cps. in 2% solutions—considerably higher than other nonionic thickeners. As a result, you save up to one third of your thickener requirements—also Natrosol can be added dry to the pigment grind.

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AEROSOLS FEATURED at PACKAGING SHOW

By
E. G. Roberts

THE Packaging Show at Atlantic City last month continued its tradition of being one of the most exciting experiences in industrial exhibiting.

Competitive packaging material and equipment manufacturers endeavored to outdo each other in their bid for a share of this ever growing market. For the past decade aerosols, though still a small part of the overall packaging industry, have, more often than not, been one of the "glamour girls" of the show. This year aerosols, though making a good showing, were in somewhat a minor key compared with the past.

Some of the large factors in the field merely indicated that their aerosol facilities were available along with their other packaging services. It was rumored that at least two exhibitors had planned to show major new developments but were forced to cancel out due to development delays. Despite their minor role in the show many exhibitors had much to offer the aerosol aware visitor.

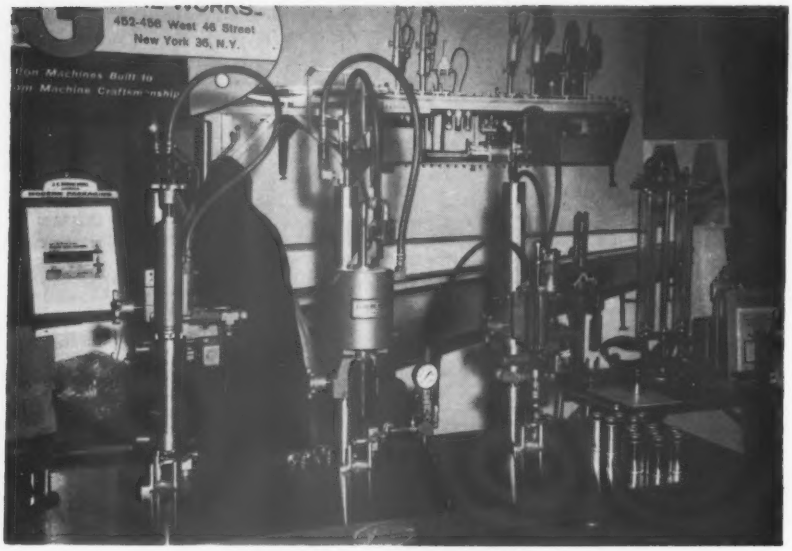
General Chemical Division, Allied Chemical Corp. of New York continued, as in past years, its valued service to the industry of providing a large part of its booth as an "Aerosol Information Center". Here was presented the literature of many suppliers of valves, containers, equipment and fillers in easy available form for the visitors files and library. Available also was the excellent publication of General Chem's "The 'Magic Touch' of Aerosol Packaging and You" providing an introduction to the industry. On its own they demonstrated the use of "Genetron" in quick-breaking aerosol foam products. This new development is of most interest to the cosmetic industry but might well be applied to paint removers.

The E. I. duPont de Nemours & Co., Wilmington, Del. as part of its overall packaging presentation showed some components of aerosols but compared to previous years did not feature pressure packing.

Dispensing Viscous Materials

Among the container manufacturers, Crown Cork & Seal Co., Philadelphia attracted crowds with its magician extolling the wonders of the aerosol method. One of its new developments of interest to the paint industry was merely hinted. This was a presentation of a container system of dispensing very viscous material which until now have been impossible to pressure pack. The product displayed was peanut butter but the method just as well could be utilized for the convenient dispensing of vis-

General Chemical's Aerosol Information Center.



J G Machine Works Exhibit

cous pastes. The process is still in the development stage.

Containers

Continental Can Co., New York, offered its full range of aerosol cans including its still experimental 24 ounce drawn aluminum body-tin double seamed bottom can. Little information was available on this except that it is still "under development".

American Can Co., New York likewise exhibited its various size aerosol cans but its "giant size" still experimental, was absent, at least to this observer. By means of laboratory equipment American Can demonstrated the techniques of aerosol packaging. Compared with previous shows, however, one gained the impression that most of the trade visitors were fairly well introduced to aerosol principles.

The Kaiser Aluminum Co., Oakland, Calif., and the Reynolds Metal Co., Richmond, Va. showed various sizes and types aerosol containers but none of particular interest to the paint trade.

Though not actually displaying, the Impact Container Corp. Buffalo 9, N. Y. through literature available at General Chemical's Information Center announced its entry into the aluminum aerosol container field. In addition to the small sizes, of interest to the paint industry are its 35 and 37 ounce cans. These are entirely of one piece, no bottom or side seams, with standard one inch aerosol top openings. They are available, FOB Alden, N. Y. in plain satin finish interior as well as epoxy coated. Exteriors may be plain or coated and four color litho. Prices on the 35 and 37 ounce sizes vary from 30 to 60 cents each depending on quantity and finish specifications.

Equipment

Among the equipment manufacturers only two displaying aerosol facilities exhibited. These were The Kartridg-Pak Co., Franklin Park, Ill. and the JG Machine Works Inc., New York. Of interest to the trade was a report at the show that Kartridg had purchased and taken over the complete facilities of Alpha Machinery Co. whose aerosol equipment will be consolidated with their own.

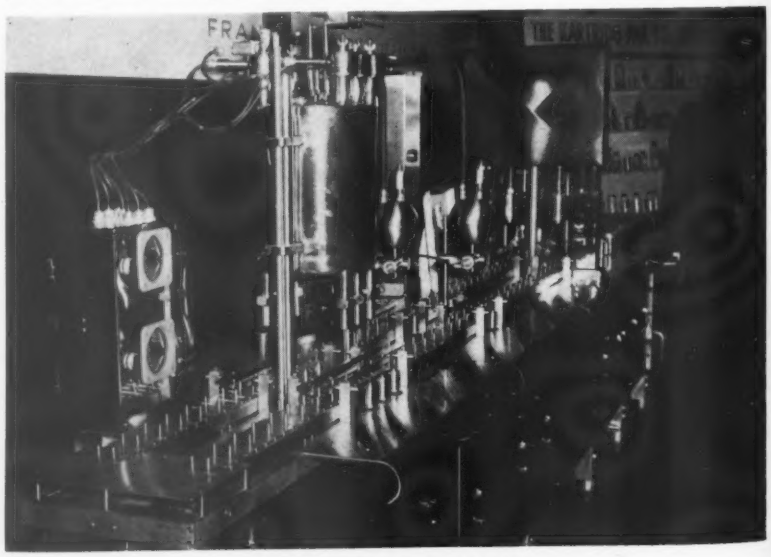
The Air Reduction Co., Customer Service Laboratory, Madison, Wisc. featured its compressed gases, nitrogen, nitrous and carbon dioxide as aerosol propellants. Reports circulating at the show that carbon dioxide is being experimented with as a propellant for aerosol paints, particularly latex paints was not verified.

The Dupont Co., Cel-O-Seal Bands Division, Buffalo, N. Y. highlighted a trend towards tamper proofing aerosol cans with the overcaps locked to the container with a cellulose seal. This feature is now used on the Plasti-Kote line of aerosol paints. This seal prevents casual sampling, cap switching and in-store damage, especially in super markets.

The Walter Frank Organization, Hillside, Ill. displayed its full line of metal and plastic overcaps.

The solution to a frequent problem in marking aerosol cans with concave bottoms was offered by the JCL Engineering Co., Los Angeles, Calif. Their "Sideline Coder" can be used for marking dates, lot numbers, colors on both the tops or bottoms of aerosol cans.

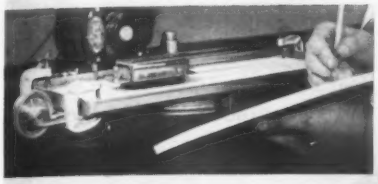
The Fluid Chemical Co., Newark, N. J. presented the advantages of contract filling both liquid and aerosol. This company is one of the country's most diversified loaders and now includes paint packing among its facilities.



The Kartridge-Pak Exhibit

NEW emulsion paint base!

VELSICOL W-617 HYDROCARBON RESIN EMULSION



SCRUB RESISTANCE

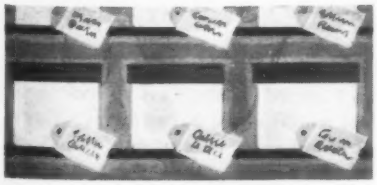
Pigment binding power plus W-617's water resistance feature makes possible paint films that develop optimum scrub resistance rapidly, giving you a really quick drying and very hard wearing paint film.

TOP HIDING POWER

W-617's high critical pigment volume concentration produces durable films with low specular gloss. Its low angle sheen gives maximum coverage and hiding of under surface imperfections.

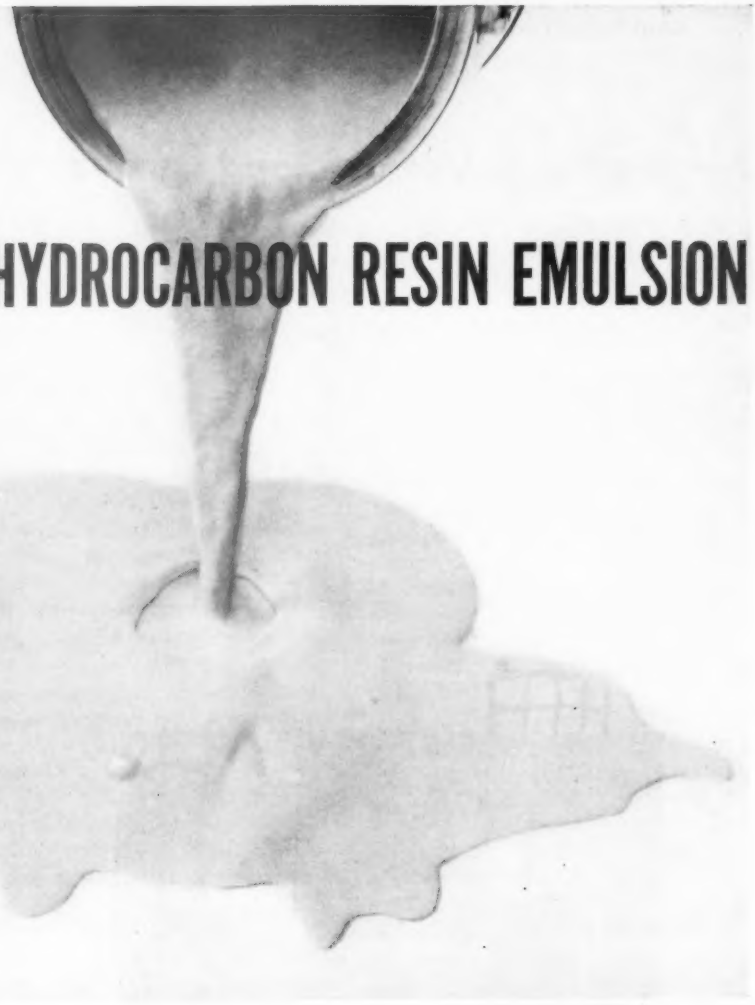
WATER SPOT RESISTANCE

W-617 films have maximum water repellency and minimum re-emulsification advantages created by the non-polar nature of the hydrocarbon base polymer and a specially developed wetting agent system.



SHELF STABILITY

Continuing tests, after 18 months showed that Velsicol W-617 as the sole vehicle or, used with polyvinyl acetate, styrene butadiene or acrylic latexes have good stability properties under standard storage conditions and under the Federal freeze/thaw specifications.



A specially designed wetting agent system that produces a minimum particle size is the secret for giving you the best film properties. W-617 does just that!

Velsicol's W-617 is a new emulsion paint base created with a polymer of the Styrene-Indene-Isoprene type. The emulsion itself is very stable and can be used as the whole paint vehicle or formulated into paint systems in combination with polyvinyl acetate, styrene butadiene or acrylic latexes. W-617 combined with the conventional paint latexes adds easy film coalescence and all the other wanted film properties.

Top performance and low cost are the magic words that will describe your paints formulated with Velsicol's W-617. Write now for testing samples and complete data.

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di-(methoxyethyl) phthalate
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di-isobutyl phthalate
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—an octyl butyl phthalate
dioctyl phthalate (DOP)
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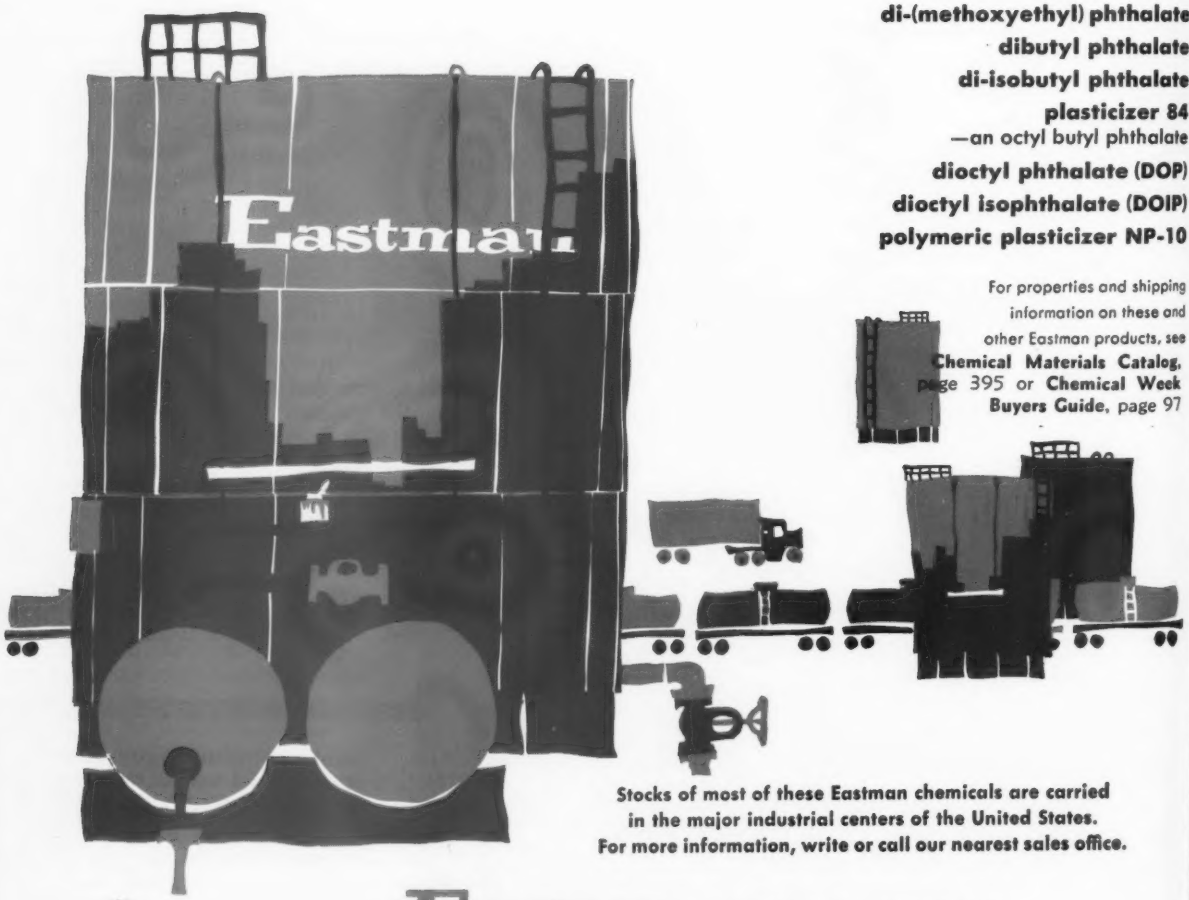

For properties and shipping information on these and other Eastman products, see **Chemical Materials Catalog**, page 395 or **Chemical Week Buyers Guide**, page 97

Stocks of most of these Eastman chemicals are carried in the major industrial centers of the United States. For more information, write or call our nearest sales office.

Eastman CHEMICAL PRODUCTS, INC.

KINGSPORT, TENNESSEE, subsidiary of Eastman Kodak Company

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tennessee; Atlanta; Chicago; Cincinnati; Cleveland; Framingham, Massachusetts; Greensboro, N. C.; Houston; New York City; St. Louis. **West Coast: Wilson Meyer Co.,** San Francisco; Los Angeles; Portland; Salt Lake City; Seattle.

Aerosol Developments

Capping Device Developed

A modified design of the Vernier caliper has been developed for the aerosol industry. Micrometric measurements of all the essential parts of the container and their dimensions are possible with this new instrument. Cap and valve diameters; crimp depth; inside diameter; outside diameter; container height (to 6″); aperture; cap roll; and most all the dimensions subject to quality control are accessible and measurable to 0.001″. The tool may also be used in transferring and checking machine and equipment settings to the same tolerance.

This design modification was originated by DeGray Design, Inc. of 900-25th St., West Palm Beach, Fla. and is distributed on an exclusive basis by that company. Made of hardened stainless steel and in a protective wooden case, it is manufactured in Switzerland by the Lufkin Rule Co.

Midwest Consultants Add Line

Midwest Consultants, Inc., St. Louis, announces the addition of a second complete aerosol packaging line. The new line is a fully automatic straight line 800 series built by The Kartridg Pak Co.

Midwest Consultants specialize in filling products which they formulate for private label and name brand marketers.

Organized in 1934, Midwest's plant occupies 240,000 sq. ft. of space on seven acres of ground. Midwest employs over 250 people, including 26 graduate chemists and chemical engineers. Besides aerosols, Midwest, through its subsidiaries, manufactures biochemicals for medical research; manufactures a line of cosmetics; anodizes aluminum; manufactures paints and printing inks.

The new aerosol line gives Midwest almost 100% increase in capacity.

CSMA Passes Resolutions on Aerosol Cans

The Aerosol Division Executive Board on recommendation of the CSMA Aerosol Division Commercial Standards Committee, presented and passed at the 45th Annual Meeting of the Chemical Specialties Manufacturers Association, the following specifications:

Dimensions	202 Diameter	211 Diameter
A. Inside diameter of 1″ cup opening	202 x 214	211 x 407.5
B. Outside diameter of 1″ cup opening	202 x 314	211 x 413
C. Height of curl opening above double seam	202 x 406	211 x 510
D. Height over double seam	202 x 509	211 x 604

F. Height between double seams

Dimensions	202 Diameter	211 Diameter	Tolerance
A.	1.000	1.000	plus/minus .004
B.	1.226	1.226	plus/minus .010
C.	.396	.798	plus/minus .016
D.	(Sales Code Height- (Example: 3.14 or 3.875″ −.010 −3.865)	.010	plus/minus .031
E.	Item C plus Item D		plus/minus .047
F.	Sales Code Height	.300	Minimum

As of January 1, 1960 the companies have reported as herewith:

American Can Company —In Compliance
Continental Can Company —In compliance
Crown Cork & Seal Co., Inc. —202 Now in Compliance

Kartridg Pak Buys Alpha

Alpha Engineering Works, Inc., Mt. Prospect, Ill., has been purchased by The Kartridg Pak Co. of Franklin Park, Ill., and Davenport, Iowa, it was announced by Harold M. Mayer, Kartridg Pak President.

Alpha Engineering Works is a contract engineering firm and a pioneer in the development of aerosol filling equipment. Kartridg Pak, a subsidiary of Oscar Mayer & Co., Inc., produces and and markets special equipment for processing and packaging sausage and meat products.

"Acquisition of Alpha," Mr. Mayer said, "will enable us to strengthen our engineering and research facilities, increase our manufacturing volume and offer a more complete line of products to meet the constantly growing needs of industry for aerosol packaging machinery."

Aerosol equipment production and contract engineering service will be coordinated at the Franklin Park and Mt. Prospect plants, with manufacturing carried on at Franklin Park, and sales, administration, engineering, service and accounting centered at Mt. Prospect.

Serving on an executive committee for the coordination of the Franklin Park-Mt. Prospect activities will be Mr. Mayer, George W. Heath, Kartridg Pak Vice President, and Richard B. Stanley, former President of Alpha Engineering. Mr. Stanley will serve as General Manager of the Franklin Park-Mt. Prospect Division, and Mr. Heath will head the New Products Division.

Alpha's contract engineering service to industry will continue as a division of Kartridg Pak under the name of Alpha Engineering Service and will be managed by Bernard Pass.

All sales, service and manufacturing functions previously performed by the Arthur Colton Company for Alpha Engineering will now be performed by Kartridg Pak, under terms of the contract agreement. Sales and administration offices for the aerosol equipment and contract engineering activities of Kartridg Pak will be at 800 West Central Road, Mt. Prospect, Ill.

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MAGNESIUM SILICATE

625

IT'S NEW

ASBESTINE 625 is the newest member in the family of ASBESTINES produced from especially selected high grade "platey" ore, precision milled, and classified by a unique process. ASBESTINE 625 is an outstanding ultra-fine controlled particle size pigment having an average particle size of only 2.3 microns.

The combination of its small particle size, "platey" structure and high oil absorption make it especially adaptable as an aid to flatting efficiency and as an additive to control gloss.

Having a Hegman of 5½-6, combined with its excellent wetting properties and absence of agglomerates it is a stir-in pigment which readily disperses and rapidly develops a paint of high consistency exhibiting a "buttery" feel. ASBESTINE 625 has excellent suspension properties.

Looking for a pigment to solve that special problem? Interested in improving the suspension of your paint systems? Why not "order in" a sample of ASBESTINE 625 to see how it fits into your current products or those under Research! A TRIAL WILL TELL! Write for a free sample and technical data. We'll be glad to send it—Write today.

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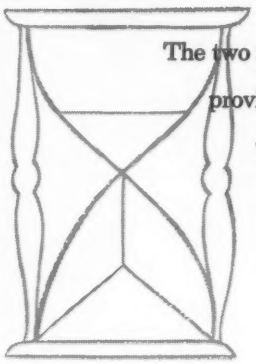

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Allied Chemical

By
Phil Heiberger

The author continues his random reflections on various aspects of the paint industry. The opinions expressed in this column are his alone and do not necessarily reflect those of this publication.

Problem of Research Problems

ONE need not be overly sophisticated in chemistry today to recognize that the future of any specific industry based on applied science depends as much upon the creation of new concepts and the ability to tackle difficult problems and clarify old mechanisms as on the synthesis of new intermediates and the application of old standbys.

P. Heiberger

Scientists are often thought of as problem solvers. Strangely, the knottiest problem of all, more often than not, is the preliminary necessity of defining the problem to be solved. Too often insoluble problems are assigned to unwary workers because inadequate screening fails to reveal the stunning complexity beneath a deceptive superficial simplicity.

Sometimes, too, logic and prudence are recklessly cast aside in favor of wishful thinking and indulgence in daydreams. ("If, by some miracle, a solution to this impossible problem were to be stumbled upon," goes the refrain, "my intuition tells me it would be a bonanza." Or, in the vernacular, "If I *had* it, could I *sell* it!")

This brings to mind the story of the executive, renowned for amicable relations with his research staff, who was asked the secret of his success. "With me, research is a fifty-fifty proposition," he replied. "I think up the problems; my staff solves them."

While this is intended as humor, too often it is an accurate description of an actual situation, with far less happy results, needless to say. Therein lies the tragedy that must underlie all humor.

Surely, abundant experience has shown that successful research is a team enterprise. There must be discussion, understanding, exploratory sallies, judicious review, and eventually mutual agreement among executives and research staff on a tentative plan of attack. Tentative, I say, because flexibility is important. Preliminary data may indicate the wisdom of altering the course. Were such a pattern followed more universally, fewer highly trained scientists would be struggling over ill-assigned problems, fewer tempers would be exploding, and fewer hours would be lost in frustrating endeavor.

Communication

General and specific problems of communication between the scientists and non-scientists in our western culture have been considered and reconsidered much of late. The viewpoint of Charles Perry Snow (The Search, Charles Scribner Sons, 1958), in particular, has been given wide publicity. Snow believes that the gap between the non-scientific culture and the scientific culture may lead to serious difficulties in the sense that each group is ignorant of the others' fields. Even worse, each group tends to adopt scornful and deprecating attitudes toward the efforts of others.

Snow finds this mutual lack of appreciation is disturbing. In a more ideal society, he fells, the intellectual elite, rather than create and aggravate difficulties, would strive to combine their respective resources for the benefit of all members of society.

Many scholars, while bemoaning the present failures of communication, pounce upon education as the cure-all. Salvation must lie in the sharing of a common pool of knowledge. Non-scientists must learn a minimum of science, and scientists must be exposed to a modicum of philosophy, psychology, art, history, and other areas of knowledge commonly called "the humanities." Only through the sharing of such knowledge can mutual understanding, sympathy, and cooperation be developed.

Complications

"The Germantown Courier," a small neighborhood weekly newspaper in Philadelphia, is unwilling to concede that this is essentially an educational problem. It is, "of course, partly an education problem," the Courier admits. "But it has another aspect that cannot be overlooked. That is the fact that certain sharply different psychological types are drawn to science and to the humanities. And this basic

psychological factor is probably no small obstacle in the way of breaking down the barriers between scientists and non-scientists. In fact, it will probably be a necessary preliminary to any formal broadening process to understand and overcome the underlying psychological bents among the two groups."

This idea stimulates speculation. Can it be that each of us inherits from his ancestors, in addition to color of eyes and hair and type of body build, a recognizable characteristic called "scientific bent?" This argument seems to hark back to the old heredity-versus-environment debate, best resolved by the compromise conclusion that each plays a part in the finished human product, and attention is best focused on the interplay between the two forces. In other words, society must offer opportunities to all for education according to ability to receive and utilize it. Certainly those blessed with both scientific and non-scientific bents are in enviable positions. On their shoulders rests the privilege and responsibility for leadership in the integration of society's various segments.

Industry Image

Advertising specialists earn their livelihood by creating "images" in order to motivate consumers to think and behave in patterns considered desirable. When an image is found to exist already in the public mind, it becomes the goal of an attitude molder to exploit it (if it is favorable) or to offset it (if it is not).

Sometimes it's the self-image that needs modification. This shouldn't surprise anyone since excessive proximity is known to distort vision. In the absence of advertising specialists to remold our attitudes toward ourselves and our industry, a comparison of our personal self-image with another's image of us may prove instructive.

"O wa some Power the giftie gie us to see oursels as ithers see us?" Publication #56, American Association for the Advancement of Science, 1959, offers a rare opportunity for just that. After reading a certain portion of it, we can decide *whose* image needs remodeling—our own or someone else's.

The publication referred to above reports on a recent symposium on basic research, sponsored by the National Academy of Science, AAAS, and the Alfred P. Sloane Foundation, in which leading scientists, educators, and administrators participated. W. O. Baker, research vice president of the Bell Telephone Laboratories, discussed certain philosophical aspects of science under the title, "The Paradox of Choice." In the section "Role of Theory in Organizing Applied Science," Baker provides us with a rather unflattering insight into the image of the paint industry held by at least one non-member.

Listen to Baker. "The industrial technical leader who insists that his research laboratory must turn out a better conjugated unsaturated ester for paint drying and film formation will be surprised to see that new paints such as acrylic families involve neither unsaturation nor 'drying' in the usual sense. This, you may hasten to say, is too close to technology in the first place, but it need not be if the principles of adhesion and of film formation are truly heeded even in so theatrically homely an example as the paint industry. (We'll get to some loftier examples soon, but the striking thing is this one is that there is beginning to be some general theory.) Then the interests of truly basic research on polymerization, on polymer film properties, on rheology, and the physics of surfaces will be available to that industry."

Overworked

In the same AAAS volume cited above, Iael Wolfle writes the following, "If words could talk, research would surely complain of being overworked. The word is used to describe the scholarly activities of a Nobel Laureate and to give prestige to such immediately useful records as counting the customers of a chain store. It may in one sentence be used to describe the search for the laws of nature and in another the search for facts to support a conclusion already reached."

Equal Distribution

Many things in this world are distribted inequitably—brains, beauty, health, wealth, food, rainfall, water and sunshine. But there's one thing to which this generalization does not apply—time. Each of us young, old, rich, poor, exalted, lowly—is allotted only 24 hours per day. And each of us has the task of cramming into this meager two-dozen a host of activities designed to satisfy our needs, wants, interests, and momentary whims. Death and taxes are not to be bypassed. Neither is the 24-hour-day ration.

Science can put a feather in its cap for adding years to our lives, but no one yet has devised a scheme for adding hours to our days.

Oronite Launches Program For Coatings Raw Material

Oronite Chemical Co., a subsidiary of the Standard Oil Co. of California, is launching a stepped-up overseas marketing program for Isophthalic, a chemical widely used in this country as a raw material for plastics and surface coatings.

As the first phase of the program, Robert W. Stephenson PhD., Oronite's Isophthalic specialist, will hold slide-illustrated seminars in various European countries to discuss a broad range of technical and marketing information about the product with European scientific and industrial groups.

In his talks, Mr. Stephenson will emphasize present large-scale applications for Isophthalic in the United States—with particular emphasis on use of Isophthalic in alkyd and polyester resins. He will discuss future uses illustrating his remarks with laboratory-produced fibers, foams, films, etc.

Among the first stops on Mr. Stephenson's itinerary is London, England, where he will address a joint meeting of the Society of the Chemical Industry and the Oil Color Chemists Assn. He will also talk to industry groups in England, France, Germany, Italy, Norway, Sweden, Denmark, and the Benelux countries.

Commenting on the marketing program—which will be handled through Oronite's foreign marketing affiliate, California Chemical International — Oronite officials pointed out that improved production techniques have boosted Isophthalic output overcoming ashortage which existed last fall.

New performance data on Isophthalic-based coatings!

As a part of its continuing Isophthalic research program, Oronite employed a well-known independent laboratory to test a series of alkyd formulations. In almost every instance the Isophthalic-based products outperformed the competing commercial alkyds. Comparative data was secured in five categories.

Air-Drying Coatings. The Isophthalic-based alkyds showed faster air-drying without compromising other properties. Through-dry, hardness, toughness, adhesion and resistance to impact also favored the isophthalic alkyds.

Furniture Lacquers. Improved hardness and sanding ease without sacrificing cold-checking resistance, as well as other desirable properties—such as better adhesion, gloss and color retention, resistance to abrasion proved the Isophthalic alkyds superior.

Industrial Baking Enamels. Good results were also recorded in baking enamels, indicating how Oronite Isophthalic can solve important application and exposure problems.

White Baking Enamels. Properties such as pigment suspension, initial whiteness, resistance to water, alcohol, detergents and salt spray were significantly improved in the Isophthalic-based enamels.

Machinery and Maintenance Coatings. These comparison tests showed that Isophthalic alkyds performed extremely well in four-hour-drying machinery and maintenance coatings. Results are available to you for evaluation.

Write for complete test results. Address your inquiry to the executive offices of Oronite.

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They're both blowguns, but...

each is in a class by itself . . . like Wyandotte's PURECAL® O

The *method* of use is the same for a pea shooter or a blowgun . . . but one is used in fun, and the other in deadly earnest. Makes all the difference in the world when you're on the receiving end!

In calcium carbonates, it's the *method* that makes the difference. And Wyandotte PURECAL O – the calcium carbonate that's in a class by itself – is precipitated by a special process which consistently yields about 20% more agglomerate-free particles per pound, of cubical shape. It is a product of exceptional purity, uniformity, and whiteness.

By replacing part (or all) of your "less-bright" fillers and extenders with PURECAL O you'll extend your pigments further. Then replace the prime pigment* with PURECAL O in 10% increments until the desired whiteness is reached. Thus, quality is improved while holding costs . . . or, costs are cut without sacrificing quality.

We invite you to try PURECAL O in your formulation. Write for samples and technical data, today. *Wyandotte Chemicals Corporation, Dept. 756-P, Wyandotte, Michigan. Offices in principal cities.*

*At least 10% of titanium dioxide may be replaced with PURECAL O without apparent loss in whiteness or hiding power.

Wyandotte CHEMICALS

MICHIGAN ALKALI DIVISION

PACING PROGRESS WITH CREATIVE CHEMISTRY

The Case of The
MYSTIC MONKEY
DON'T LOOK SO GLUM, JOHN!
I CAN'T HELP IT! SOME CONTAMINATED SOLVENTS SLOWED DOWN PRODUCTION AGAIN AND IF IT HAPPENS ONCE MORE... I'VE HAD IT!
HEY! LET GO!
DARN IT! SAY! WHAT'S THIS ABOUT SKELLYSOLVE IN THIS MAGAZINE AD?
TO KEEP OUT ALL CONTAMINANTS, SKELLYSOLVE PUMPS, LOADING LINES, STORAGE TANKS AND TANK CARS ARE...
FINE! WE'LL LOOK FOR DELIVERY RIGHT AWAY!
USED ONLY FOR SKELLYSOLVE! AND TANK CAR SHIPMENTS ARE MADE ONLY FROM THE REFINERY
PURCHASING AGENT
CONGRATULATIONS, JOHN! PRODUCTION IS CLIMBING SINCE YOU SWITCHED TO SKELLYSOLVE... AND SO IS YOUR SALARY!
THANKS, BOSS!
SOME MONTHS LATER
THAT'S A BIG TIP FOR A MONKEY, JOHN!
IT'S NOTHING COMPARED TO THE TIP HE GAVE ME ON SKELLYSOLVE!

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SKELLYSOLVE-S. Low end point mineral spirits for thinning paints, varnishes, and polishes. Closed cup flash point about 103° F.

SKELLYSOLVE-S2. A quick-evaporating mineral spirits. Closed cup flash point about 101° F. Excellent for industrial paints and for polishes and waxes.

SKELLYSOLVE-V. Narrow boiling range V.M.&P. naphtha. Excellent for dip and spray enamels. Closed cup flash point about 50° F.

SKELLYSOLVE-T. High boiling mineral spirits for longer, wet edge. Closed cup flash point about 140° F.

SKELLYSOLVE-X. A heavy, slow drying naphtha having a high flash point. Used to increase the wet edge time, to give better flow and leveling characteristics tending to eliminate brush and lap marks in hot weather.

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and wide range of aromatics.

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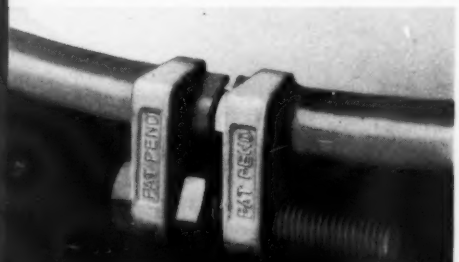
are your dangerous products* safe during shipment ?

They are if they're shipped in Inland steel drums. Designed for shipper assurance of compliance and safety, Inland open head ICC 17C and 17H drums are manufactured to withstand the punishing drop test with no leakage. Dangerous products can be packaged with more assurance that they will arrive "as shipped" at your customer's plant in this safe, secure drum. ■ Test and compare, as Inland's engineers have . . . prove for yourself that Inland constantly strives for only the best in steel container construction, interior linings, decorating and all other services that mean extra value to shippers.

* To be in compliance with Interstate Commerce Commission regulations, certain products classified as "dangerous" must be carried in steel drums that, when filled with water, can be dropped 4 feet onto solid concrete, striking diagonally on locking ring, with no leakage. Hydrostatic pressure tests of 15 psi and 30 psi for open head drums ICC 17H and 17C must also be successfully passed.

INLAND STEEL CONTAINER COMPANY member of the INLAND steel family

6532 South Menard Ave., Chicago 38, Ill.—Plants: Chicago Jersey City • New Orleans • Cleveland and Greenville, Ohio



One feature of Inland drop test-defying construction is this super-strong locking ring. Special forged steel lugs** support entire profile periphery rather than just a portion of it . . . locking ring does not fail under impact, package remains intact.

**Patent Applied For

The DRAIS-LEHMANN PLANETARY MIXER

features high production with low maintenance

Drais-Lehmann Planetary Mixer, showing stirrer unit in raised position

The DRAIS-LEHMANN PLANETARY MIXING and KNEADING MACHINE is designed for rapid stirring, mixing and kneading of viscous materials. This unit incorporates every technical advance for increasing output with relatively low maintenance cost.

A new type quick locking and releasing device for the tank and use of several mixing tanks permit practically continuous production. This provides distinct advantages when stirring into a paste; diluting, coloring, pre-mixing and homogenizing paints, lacquers, printing inks, plastic pastes, pharmaceutical and cosmetic materials, foodstuffs, beverages, etc.

The Mixer functions on the planetary principle with two agitators turning along the tank wall and simultaneously rotating at a higher speed around their own axes. The stirring mechanism has mixing blades of opposed, staggered spiral arrangement (see photograph); a rod type stirrer or a special agitator—according to the material processed. The machine is available in several types, power specifications and metals, including stainless steel.

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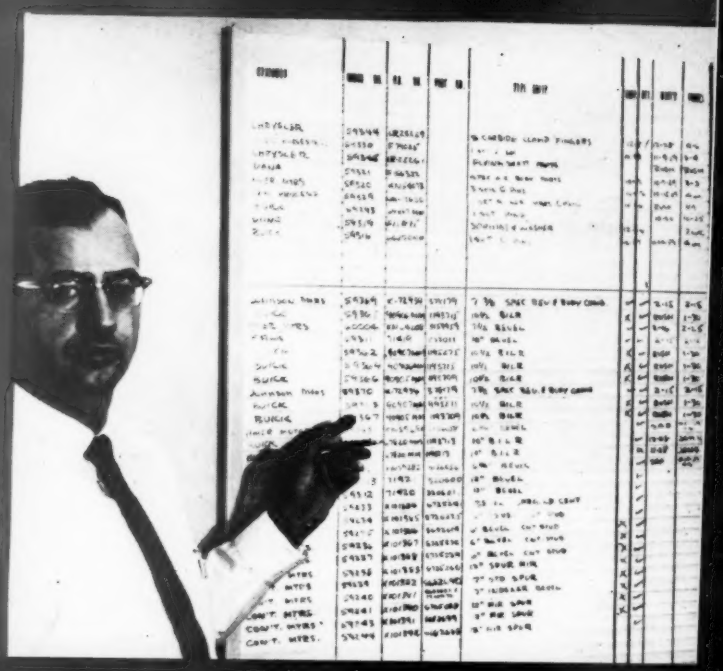
PRODUCTION

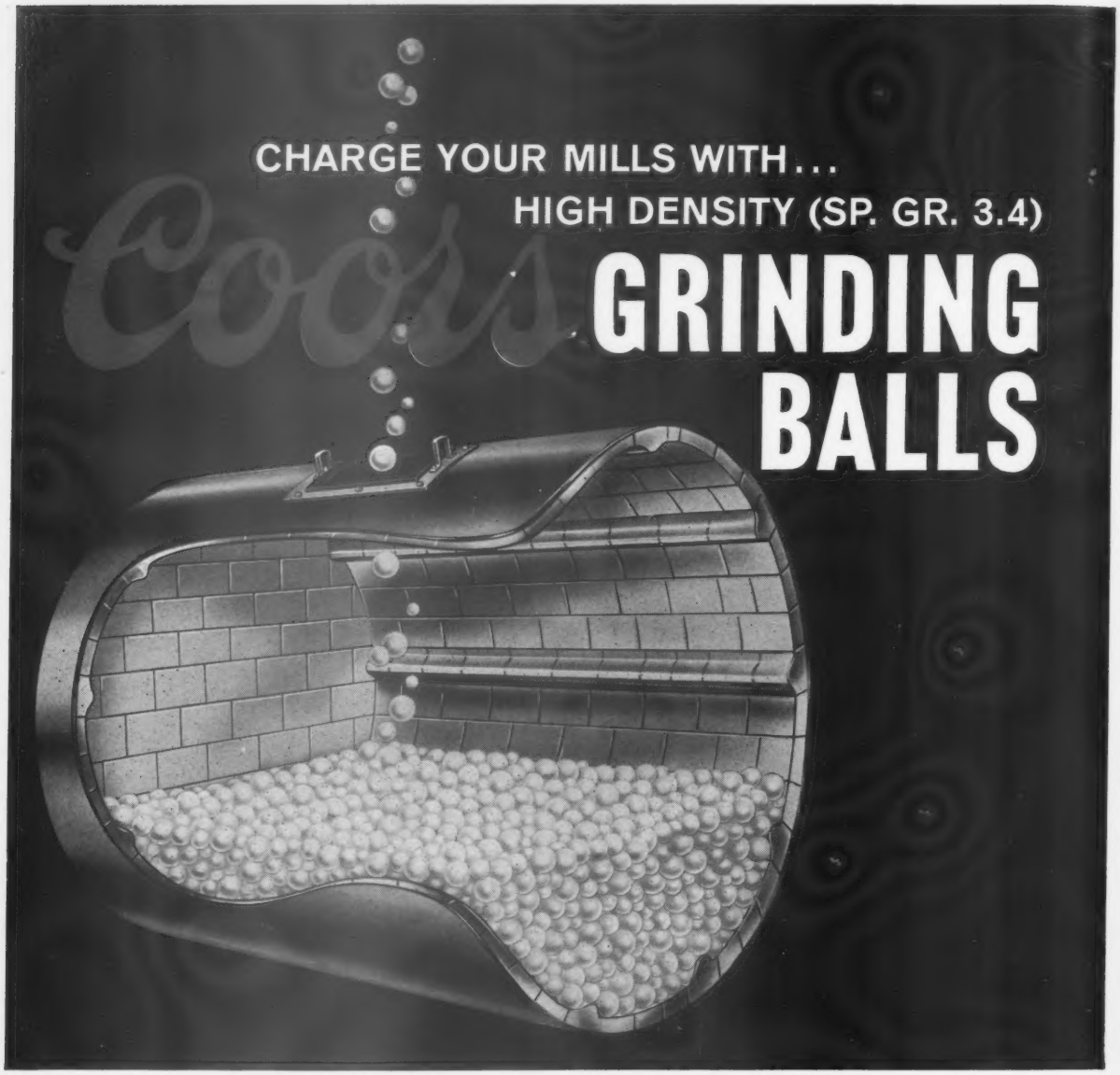
PACKAGING

MATERIAL HANDLING

NEW EQUIPMENT and MATERIALS

Visual schedule board can be of invaluable help in production planning. This month our production editor, Lawrence Shatkin, discusses various aspects of production planning and control in the paint plant to insure reliable deliveries, see page 79.





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IMPROVE milling results—by operating your mills at lower temperatures, by eliminating excessive amounts of unground material, by making it easier to clean the media and by getting longer wear from the media and the mill lining.

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Manufacturers of High Density Grinding Media and Mill Liner Brick.

PRODUCTION PLANNING and CONTROL

By
Lawrence Shatkin

J. KEITH Louden stated that "productivity is the key, quality the path, and low cost the motive power."

However, planning is a prerequisite for reaching a high level of performance in each of these activities. The term planning connotates a joint effort encompassing teamwork, while management control describes the action taken by management in carrying out its responsibilities. It is a control imbued with action directed towards the solving of company problems.

The functions that come under the sphere of production planning and control are numerous. They include such activities as job planning, work scheduling, receiving, finished stock control, production records, operation analysis, purchasing, and any other duty relevant to the flow of production.

Goals of Production Planning

All of our movements must be directed toward satisfying our customers' needs, because in the final analysis he determines whether a company moves ahead, or becomes stagnant and deteriorates. A customer expects to be given a reliable delivery rate. Furthermore, he must be notified in sufficient time when the scheduled delivery date has to be changed. In conjunction with the above conditions are the "rush" orders which somehow arrive at the height of the season. Good planning is necessary to ensure satisfactory service, which means one has to anticipate, apply acute judgment, innovate, and change directions in order to compete successfully.

The planning and control program should be geared to produce at the lowest possible cost and the minimum capital investment. The aim is to orient daily production to those items required by the customer. This will improve service by decreasing the number of back orders, and make more stock room space available for future use.

Analysis of Production Requisition

The flow of such a form could conceivably be as follows:

1. The order is received in the sales department, processed by office personnel, and passed on to the shipping department;
2. A manufacturing ticket (production ticket) is drawn for each item needed and passed along to the production manager, who in turn, forwards it to a foreman;
3. The foreman, while working closely with the shipping depart-

Reliable delivery rates to the customer depend on efficient warehousing of finished products.

The opinions expressed in this feature are not necessarily those of any particular firm or organization.

Adequate supplies of raw materials are necessary to meet "rush" orders.

The laboratory plays an important part in production planning. Here the control chemist checks sample before batch is allowed to pass on to filling station.

ment, schedules production;
4. The shipping department sends to the production department a daily list of items being back ordered;
5. The production ticket accompanies the sample that is brought to the laboratory for inspection, and the results are given to the control chemist;
6. The control chemist makes the necessary adjustments, and signs the production ticket, which is passed along to the filling station;
7. After the paint is filled, the production requisition is returned to the office for tabulation, recording, and filing.

Performance and service could be improved, if somewhere along the line information regarding materials low in supply, or out of stock, could be communicated to the production department with a minimum delay. Instead of waiting for a daily tabulation listing articles that aren't available, a "B Order Notice", depicted in figure 1, can be used to help attain the primary objective of improved service to the customer. This form is initiated by the order picker, which is immediately passed on to the production department. At this point, close cooperation and coordination are required by the production and shipping departments, to make certain that undue pressures aren't formed, and that this form is used as a means to an end, and not as an end itself. Good judgment is required when rescheduling production. In many instances it will be difficult to reschedule production because of prior commitments or the existence of special conditions. One department cannot do the job itself. It requires planning, teamwork, balance, and proper attitudes.

BACK ORDER NOTICE

WE ARE BACK ORDERING:

ITEM	SIZE

PLEASE RUSH _____ DATE

ROUTE TO PC ☐ LD ☐ or JG ☐

P-748-A

Figure 1. Typical back order form.

Seasonal Fluctuations

The paint industry is highly seasonal, which means that careful planning must be made during the slow season, that will absorb some of the pressures which occur during the busy season. Attention should be given to a "Small Size Program," where, for instance, trade sale materials such as speed enamels, varnishes, colors-in-oil, aluminums, penetrating stains, etc. can be filled into small containers during the inactive period. This will accomplish two things: optimum investment of capital in inventory and projected savings in production cycles when it will be most needed. One could level at a three, six or nine months supply based on the previous years production, the available space, and business conditions.

This inert period should serve as the focal point for putting into effect new procedures and methods, installing new machinery and learning its capabilities and limitations, reviewing stock and reworking obsolete lines, and revising com-

pany policies where necessary. These adaptations and innovations will increase productivity.

Coordination

Production planning is coordinated with sales forecasting. The ideal production pattern should be reviewed with the sales department. Selective selling and production can be as important as labor and material costs. It is necessary to determine the adequacy of manufacturing and engineering facilities, and manpower requirements before launching a program.

Keeping equipment in "tip-top" condition is important in maintaining production schedules.

Production control and purchasing must work together to insure that raw materials and supplies are on hand when needed. It appears that the lack of materials and equipment breakdowns account for the major diruptions in production schedules. Reorder points must be established to allow production control to fulfill its major purpose—the schedule and flow of production so that promised delivery dates are met.

Planning and control are a systematic process by which production and purchasing activities are coordinated with sales requirements. This entails imagination, a critical and positive approach, and thought-provoking ideas.

Systematic analysis of any problem will result in a more efficient operation.

NEW LUMARD JARS

HAVE HIGH STRENGTH AND DENSER BODY

These new jars, when subjected to tremendous punishment in the form of impact and abrasion, outlasted ordinary porcelain jars better than 3 to 1.

Important changes have also been made in the design of the jar. All Lumard jars have flat gaskets which seat on flat ground surfaces on both jar and cover. Covers are interchangeable.

Metal handles, securely cemented, have built-in finger holds for lifting the loaded jar, to remove the cover, or break the seal. These handles distribute the pressure of the crossbar set screw over the entire cover. Form-fitting steel neckbands distribute tightening pressure, decreasing hazards of cracking the neck when tightening cover.

A separate crossbar makes cleaning cover easier. Tightening the cover is accomplished by a large, easy-to-grip handwheel.

The new "Lumard" jars come in sizes from 1 quart to 57 gallons.

PAUL O. ABBE

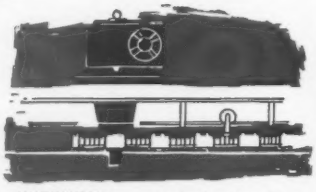
389 CENTER AVE. LITTLE FALLS, NEW JERSEY

BALL & PEBBLE MILLS
DRY & PASTE MIXERS
DRYERS & BLENDERS

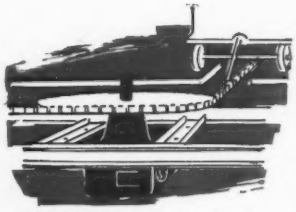
FAST off-the-shelf delivery

MORSE EBERHARDT-DENVER CONVEYOR DRIVES

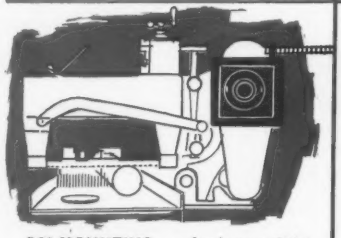
★ **No design limitation . . . up, down, or 90° mounting ★ one-piece alloy cast iron housing ★ high torque capacity ★ single or double reduction gears ★ input ratings from .12 hp to 53.72 hp using double worm reduction or helical worm reduction ★ ratios from 5:1 up to 3600:1—from stock at low factory prices.**



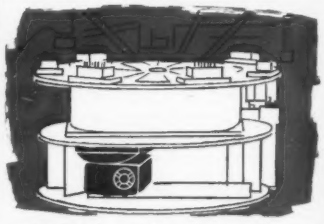
OVERHEAD . . . typical caterpillar or sprocket drives



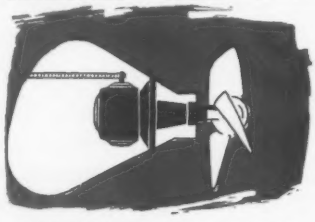
SUB-FLOOR . . . for towline or special equipment



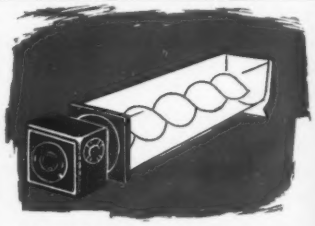
90° MOUNTING . . . for heavy-duty metal saws and machines



VERTICAL . . . base mounting for power turntable machines



SIDE MOUNTED . . . paint, pulp, liquid, or chemical agitators



HORIZONTAL . . . screw conveyors, straight or angular mounts . . . and scores of standard or special uses.

Easy-mount design . . . only 4 bolts

Morse E-D speed reducers lead in limitless applications with utmost ease in mounting. The 4 holes form a perfect square concentric to the output shaft. Unlike most designs, Morse E-D speed reducers feature oversize bearings on wide centers . . . resulting in an overhung load capacity at the end of the output shaft equal to the torque capacity.

Mounting versatility with the unit's cast-in base makes Morse drives adaptable to conveyors of all types, agitators, screw conveyors, machines, and for any other transmission of power where dependable speed reduction is specified.

You'll find Morse "standard" drives ready for immediate delivery . . . often eliminate the problems of "specials." Check with your Morse distributor, he's listed in the Yellow Pages under "Power Transmission," or write Morse Chain Company, Dept. 43-50, Ithaca, N. Y. for illustrated catalogs. In Canada: Morse Chain of Canada, Ltd., Simcoe, Ontario.

MORSE BW

A BORG-WARNER INDUSTRY

New Developments

Southworth Skid Turner Eases Handling Problems

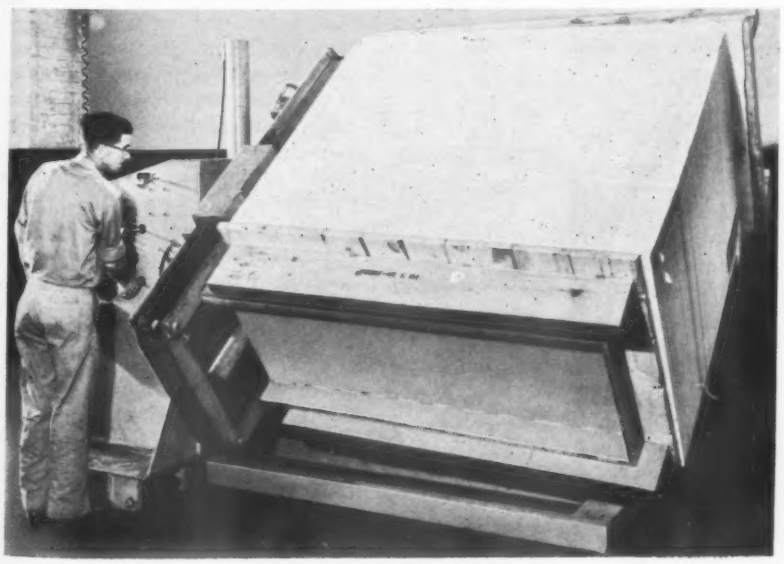
The new, completely automatic and portable Southworth Skid Turner has opened up a wide range of possibilities for the improvement of materials handling in those special instances when a skid load requires inverting. In addition to the savings in both time and labor which soon equal its moderate initial cost, the added convenience, in itself, promises hitherto unavailable operating advantages.

With a Southworth Model ST-5 Skid Turner, for example, it takes just one man approximately 55 seconds to turn a skid load weighing up to 5,000 lbs. Any type of skid may be so handled, sizes from 28″ x 38″ to 52″ x 76″. The Skid Turner will accommodate load heights ranging from 24″ up to 74″ exclusive of the skid.

Originally developed for use in printing plants and paper mills where hand-turning of skid loads of paper had been done on a slow and wasteful ream by ream basis, the Southworth Skid Turner has application in any industry handling and shipping sheet stock particularly when the customer orders delivery with a specific side up. In-plant inspection of both sides, prior to shipment, is, of course, also greatly facilitated by this method of sheet inversion.

Furthermore, wherever liquid products, canned and cartoned, or packed in containers such as drums and barrels, must be turned to avoid settling or sedimentation, the Southworth Skid Turner provides an easy method handling complete skid loads at one time rather than the lengthy succession of smaller. individual units required by hand-turning. Similarly, large objects or assemblies which must be inverted for further processing can be, more efficiently as well as more safely, handled.

Lastly, the Model ST-5 Skid Turner serves in the necessary transfer of loads from shipping skid to plant skid, or from plant skids to expendable pallets, effecting obvious economies by the reduction of both labor and damage in handling.



Hilton-Davis Offers Titanium Dioxide R-900 Through Chloride Process

Three new dispersions utilizing the latest development titanium dioxide pigment R-900 have been added to the line of flushed and dispersed colors manufactured by the Hilton-Davis Chemical Co., Division of Sterling Drug, Inc.

R-900, a rutile pigment, is produced by the chloride process. It is characterized by a higher whiteness than pigments made by the conventional sulfate process. The new colors are the whitest pigments available in dispersed form.

The three new titanium dioxide R-900 dispersions are:

1. 5-24-A-040, consisting of pigment, 75%; long oil soya alkyd resin at 100% solids, 14% odorless mineral spirits, 11%.
2. 5-42-A-040, consisting of pigment, 70%; medium short soya alkyd at 100% solids, 18.5%; xylol, 11.5%.
3. 5-00104-U, consisting of pigment, 72%; maleic alkyd ester at 100% solids, 16%; xylol, 12%.

Cal Ink Colorants Now In Polyester "Color-Pax"

The packaging of "Colortrend" universal colorants in clear, lightweight polyester packets has been announced by the California Ink Co.'s Raw Materials Dept. New packaging machinery is now in production at the firm's color plant in Berkeley. In one continuous operation, sheets of polyester film are formed into pod-like packets, precision-filled, then sealed and imprinted with code and batch numbers.

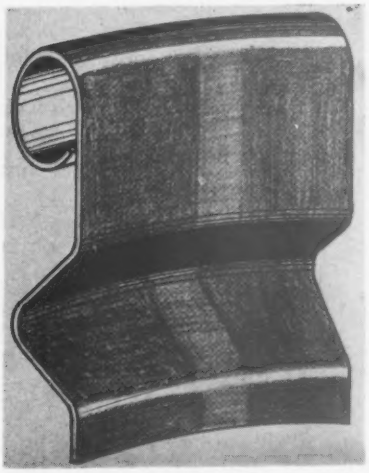
The new equipment is now being devoted exclusively to filling "Color-Pax" with the same "Colortrend" colorants used in color dispensing machines. This permits an ideal merchandising plan for paint manufacturers with a typical range of small to large retail outlets. Their small paint retailers, whose volume does not yet justify a color machine, can now use the low-cost "Color-Pax" to mix the colors shown in the 120-color and 360-color decks used by the larger dealers who have machines.

Bennett Makes Advancement in Steel Pail Construction

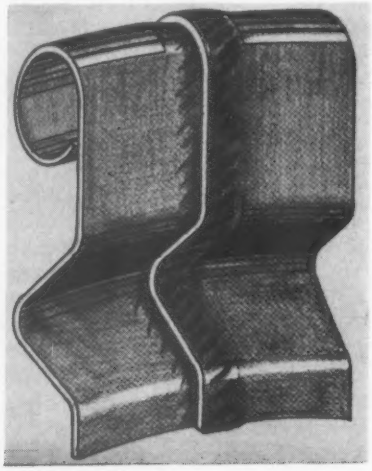
Bennett Industries, Inc., Peotone, Ill. has just announced a major improvement in the manufacture of steel pails. The company is furnishing their customers planished side seams on all hi-bake lined pails. A planished side seam gives a continuous, flat, smooth surface throughout the interior of the body.

In all steel pails, the welded side seam has been a critical area. Coatings tend to pull away from the sharp edges of the seam, leaving it unprotected.

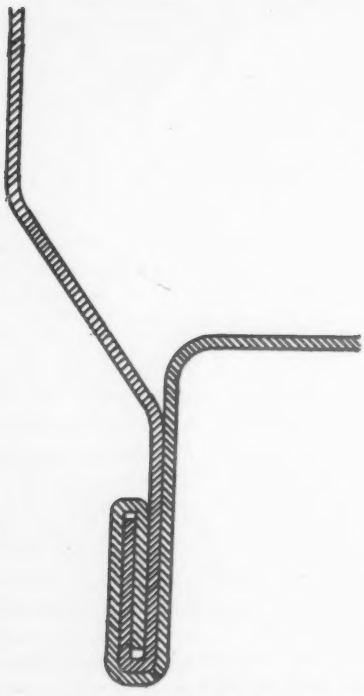
Since linings are generally used to protect hard-to-hold products, it is doubly important that the interior surface of lined pails be prepared properly so that the lining will cover every square millimeter perfectly. The planished side seam gives added assurance against the possibility of corrosion at the side seam area of the pail.



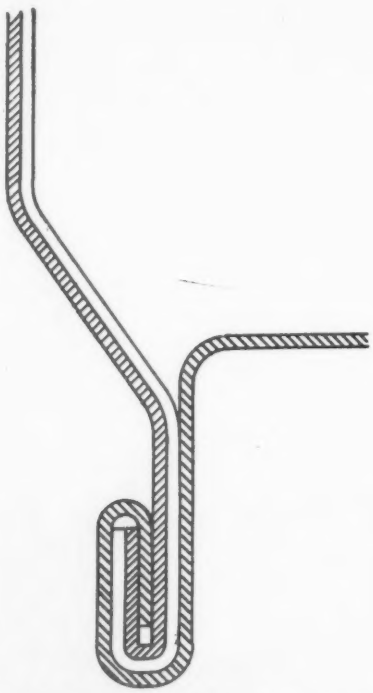
In the inside of a pail, at the top, the side seam is formed into the curl.



Unplanished side seam provides a possible point of leakage.



A planished side seam in the chime gives better lining coverage.



Two additional thicknesses of metal in the unplanished pail chime.

New Principle Discovered for Determination of True Volume Of Granular Irregular Solids Without Use of Liquids

A recent invitation has resulted in a radically new product allowing determination of true volume as well as the density, specific gravity or porosity of solid materials whether they be porous, granular, powdery or irregular in form.

Based upon the principle that two closed systems of air at the same pressure and temperature will have identical *specific* volumes, this new invention allows direct digital indication of the true or absolute volume of any solid substance with only a one minute procedure. So simple in operation, it may be accurately handled by an inexperienced operator after 5 minutes of instruction.

By its basic nature, any irregularities in operation or troubles are immediately apparent and make reading impossible until correction. It is only necessary to insert a sample of the material to be measured into a sample container, turn one crank until forcefully stopped, turn a second crank until a guage reads zero and then read volume directly from a digit readout in terms of either cc or cubic inches as specified by the user.

Since only air is present in the instrument, the sample is unaffected in any way. In addition, since a comparison principle is used, any change in atmospheric conditions or temperature have no effect.

The instrument is designed for field, laboratory or factory usage. It is light in weight (16#) and encompasses a minimum of controls. It may be completely checked and calibrated in the field by non-skilled personnel.

The initial instrument will have a choice of 50 cc or 100 cc sample containers. Readout will be in cubic centimeters or cubic inches as desired by the user. Accuracy of the field unit shown, without carrying case, is 0.1 cc with a 50 cc cup.

Development is under way on additional versions having larger and smaller sample sizes. An automatic lab version is also being developed so that all procedures are automatic and instigated by only pushing a button.

with top quality, low RMC paints based on GELVA TS-31

Shawinigan Resins' new polyvinyl acetate emulsion, GELVA TS-31, is the ideal base for high quality paints at an RMC of under $1 per gallon. Leveling and brushability characteristics—two noteworthy evidences of paint quality—are excellent with high PVC paints based on GELVA TS-31.

High PVC paints based on GELVA TS-31 are in commercial use now. They have proved superior in hide, leveling, color acceptance, color uniformity, brushability and other properties. With Shawinigan's GELVA TS-31, as with no other emulsion, you can produce low cost, high quality polyvinyl acetate interior paints suitable for do-it-yourself and contractor lines.

The development of GELVA TS-31 emulsion is another graphic example of how Shawinigan's unsurpassed emulsion technology is at work for you. For working formulations and technical information write to Shawinigan Resins Corporation, Department 2205 Springfield 1, Mass.

SALES OFFICES: ATLANTA CHICAGO LOS ANGELES
NEW YORK SAN FRANCISCO SPRINGFIELD

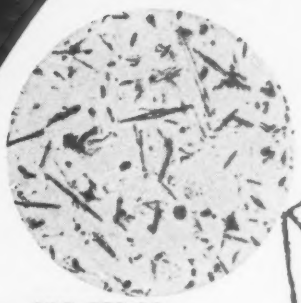
GELVA® *emulsions for paints*

SHAWINIGAN RESINS

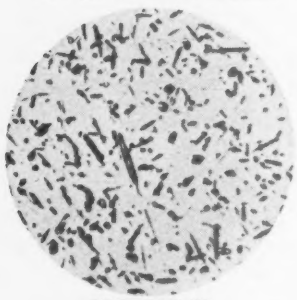
There's an AZO

acicular ZINC OXIDE

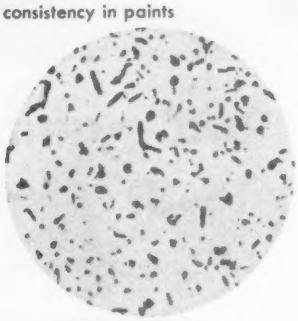
for the degree of oil absorption you require



AZO ZZZ-22
for high consistency in paints



AZO ZZZ-11
for medium consistency in paints



AZO ZZZ-33
for low consistency in paints

AZO acicular zinc oxides are free from detrimental colloidal fines, produce exceptional weathering properties in exterior paints, and are resistant to hard settling during shelf storage. For general use in the production of paints and enamels.

Whether it's high, medium or low, you'll find there is a particular grade of AZO zinc oxide to meet your needs exactly. And, when necessary, we can select within grades the exact degree of desired oil absorption.

AZO acicular lead-free zinc oxide is a superior pigment that will give extra durability, finer weathering qualities to your paints.

ALL AZO PAINT GRADE ZINC OXIDES AVAILABLE AS AZODOX (De-Aerated)

AZODOX has twice the apparent density, half the dry bulk. Faster handling, easier storing, quicker mixing. Costs no more.

1ST

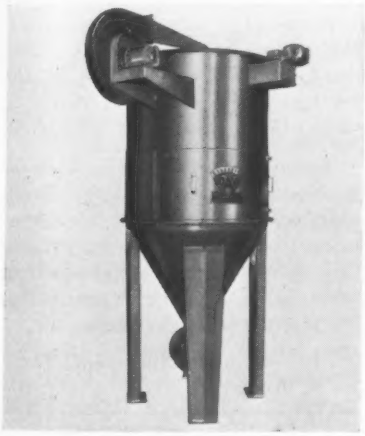
American Zinc was the first, *and is still the only* producer of acicular lead-free zinc oxides covering a wide range of oil absorptions from high to low *and including the intermediate ranges.*

American Zinc sales company

Distributors for AMERICAN ZINC, LEAD & SMELTING COMPANY
COLUMBUS, OHIO • CHICAGO • ST. LOUIS • NEW YORK

NEW EQUIPMENT AND MATERIALS

This section is intended to keep our readers informed of new materials and equipment. While every effort is made to include only reputable products, their presence here does not constitute an official endorsement.



DAY

DUST FILTER
Constant Back Pressure

The latest addition to the line of dust control equipment is an improved design "RJ" dust filter.

The most basic design change in this dust filter is a new, simplified method for maintaining the porosity of the filtering media. Here's how this works: a reverse air plenum (pressurized by a centrifugal blower) rotates in the top chamber of the filter. As this plenum cycles between filter sleeve openings, a "butterfly" valve is in a "closed" position and the plenum is filled with high pressure air from the centrifugal blower. As plenum centers over filter sleeve "butterfly" valve opens and high velocity, counter-flow air is discharged to remove accumulated dust from filter sleeve. Sleeves are counter-flowed one at a time, and the most recently cleaned sleeve is rendered inactive by trailing plate, thus minimizing redeposition. Plenum rotates from sleeve to sleeve where the same action takes place. By maintaining the porosity of the filter sleeves, back pressure and air volume remain constant.

The Day Sales Co., Dept. PVP, 810 Third Ave. N. E., Minneapolis 13, Minn.

CAN LID CLIP
Easy to Install

Newly developed can lid clip provides an approved, low-cost, and time-saving alternative to the postal regulation requiring the sol-

ANCHOR

dering of lids to cans sent through the mail.

The lid clips will greatly facilitate can-handling procedures for businesses and manufacturers that mail cans of oil, paint, compound, solvents, plastics, drugs, foods, lubricants, samples, fuels, farm-garden fertilizers, chemicals, etc.

Can lid clips are installed with a press of the thumb or hammer hit and are easily removed with a twist from a screwdriver. The clips fit all standard type cans on the market up to one-gallon capacity and enable the recipient to open and reseal the can without damage.

Three sizes of clips are now in production. The G-12 for use on gallon cans, the Q-6 for pint and quart cans, and the P-3 for pint and lesser can sizes.

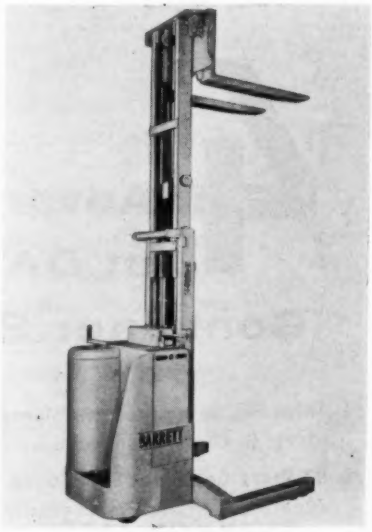
According to postal rulings, eight clips must be used on gallon cans, six on quart cans, and four on pint cans.

Anchor Chemical Co., Box 2775, Dept. PVP, 10721 Briggs Rd., Cleveland 11, Ohio.

LIFT TRUCK
Narrow Aisle Stacking

New 24-volt lift truck is now available. This truck, called the Model RST, is designed for narrow aisle stacking of pallet loads from 1000 to 4000 pounds.

Controls are placed conveniently to enable the driver to maneuver and handle capacity loads with speed and efficiency. Steering is



BARRETT-CRAVENS

controlled by his left hand. A single right hand lever controls both forward or reverse travel, and fork lifting or lowering. Twisting the lever forward or back governs travel through 4 speeds forward and 4 speeds reverse. Raising or pushing down on the lever lifts or lowers forks.

NEW MATERIALS — EQUIPMENT

The new gear drive in the RST is designed as a single package unit for space economy and top efficiency. The drive wheel, transmission, drive motor and brake are mounted vertically in line with the steering lever. The entire drive mechanism is easily accessible and may be removed from the truck chassis by unscrewing four bolts.

A dead-man type brake is actuated by a foot pedal in the rider platform and is held in release position by the driver's foot. The brake is applied when the driver raises his foot. This is an added safety factor when the truck is left standing unattended, even with a capacity load on the forks.

The large drive wheel is rubber tired. Both load and caster wheels are of tough Barathane material.

Barrett-Cravens Co., Dept. PVP, 628 Dundee Rd., Northbrook, Ill.

MAGNETIC STIRRER

Quiet operation

A new magnetic stirrer capable of mixing and stirring solutions in as many as six vessels at one time has been announced.

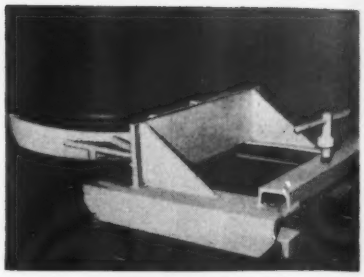
A new feature of the unit, called Synchro-Drive, solves the problem of stirring several vessels simultaneously, at the exact same speeds, the company announced. It also assures quiet operation.

The unit is named "Multi-Magnestir" and it can stir up to six vessels, each of 1000 ml. capacity, at predetermined speeds for indefinite periods of time and give identical agitation for each vessel.

The single unit construction, of heavy gauge aluminum, reduces bench space up to 50 per cent—measures only 18″ x 12″ x 7″. Up to six vessels—each six inches in diameter—can be accommodated or larger, individual vessels. Local interference from magnetic attraction is eliminated.

The "Multi-Magnestir" has a 1/20 HP motor, lubricated for life. The unit has an Ohmite rheostat, which gives variable stirring action from slow mixing to high-speed agitation.

Labline, Inc., Dept. PVP, 3070 W. Grand Ave., Chicago 22, Ill.



LITTLE GIANT

DRUM ARMS

Apron Mounted

Drum arms handle steel drums quickly. Product can be mounted on the forks or apron of any make or model lift truck. The mechanical drum handling arms automatically pick up drums in the vertical position, one or two at a time. Drum damage is eliminated.

Apron-mounted unit is best for continuous drum handling. Fork-mounted unit is ideal for intermittent handling. Arms are excellent for narrow aisle stacking as arms take up only a few inches more space than the drums.

Little Giant Products, Inc., Dept. PVP, Peoria, Ill.

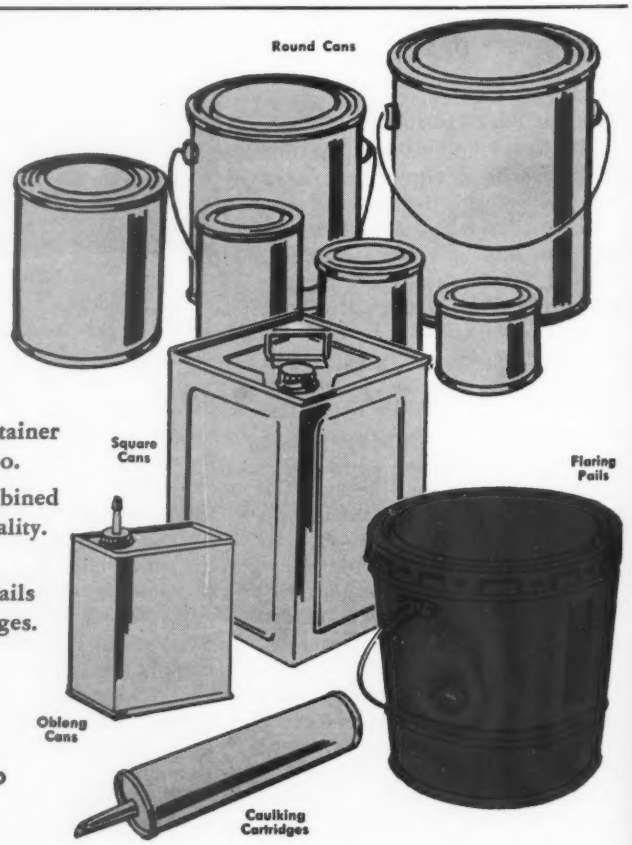
METAL CANS — SERVING MAN FOR 150 YEARS

4 Advantages of DAVIES Container Service

1. **Three Plants for Prompt Shipment.** Davies has container plants in Cleveland, Conneaut and Massillon, Ohio.
2. **97 Years Container Experience.** The extensive combined experience of the Davies plants insures reliable quality.
3. **Extensive Line.** Davies produces Double Friction Round Cans, Oblong Cans, Square Cans, Flaring Pails with a single welded seam, and Caulking Cartridges.
4. **Complete Design & Lithographing Service.**

THE DAVIES CAN CO.

8007 Grand Avenue • Cleveland 4, Ohio



NEW MATERIALS — EQUIPMENT

LEWIS-SHEPARD

CARTON CLAMP
Equal Clamping Pressures

New carton clamp attachment with a load side shift for use with electric trucks has been announced.

The carton grab arm design insures equal distribution of clamping pressures over the entire contact area, so that even the most fragile containers are readily handled without damage. These arms are ideal for handling electrical goods, paper products, appliances, packaged foods and other light and bulky materials. High friction contact surfaces on the plates prevent scuffing and reduce the clamping pressure to a minimum.

This truck-attachment combination offers the user a versatile piece of equipment providing rapid transport, neatly aligned loads and warehouse patterns, increased utilization of warehouse height, palletless operation and convenient skimming.

Lewis-Shepard Products, Inc., Dept. PVP-R10-8, 125 Walnut St., Watertown, Mass.

ULTRAVIOLET ABSORBERS
Variety of Applications

Two new ultraviolet absorbers, *Uvinul N-35* and *Uvinul N-38*, are announced.

The two products are the first of a new family of UV absorbers which are chemically identified as substituted acrylonitriles. Unlike other available UN absorbers, they do not contain acidic aromatic hydroxyl groups and show excellent UV absorption properties under varying pH conditions. The absence of these acidic groups sug-

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Defoamer ED
for butadiene, acrylic, PVA base paints.

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for Polyvinyl acetate paints, especially where "fisheyes" present a problem.

SPECIFY Foremost El Dorado's use-tested defoamers, made especially for the paint industry, for your toughest foam problems. Defoamer ED and Eldefoam 400 do these jobs: act as defoamers and anti-foamers; as wetting agents; and as suspension aids to prevent settling. Foremost also supplies the Paint Industry with a complete line of Coconut Oil Fatty Acids and Methyl Esters. Call your Foremost man today or write for samples and specifications.

PVP-1

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P. O. Box 599, Oakland 4, California

Atlanta: Geo. E. Missbach & Co.
Boston: N. S. Wilson & Sons
Chicago: M. B. Sweet Company
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Cleveland: F. W. Kamin Company
Detroit: Harry Holland & Son, Inc.
Houston: Joe Coulson Company
Kansas City: Vulcan Sales Company
Minneapolis: M. H. Baker Company
New Orleans: Breffeilh & Sheahan Company
New York: H. Reisman Company
Oakland: Foremost Food & Chemical Co.
Oklahoma City: Rullman Brothers
St. Louis: Harry A. Baumstark & Company

gests uses of these new compounds in systems which would be adversely affected by their presence.

Uvinul N-35 and *N-38* are particularly suitable for protecting nitrocellulose lacquers against UV degradation, without adding undesirable color to the coating. They may also be of value in other systems such as butadiene-styrene latex, melamine-formaldehyde, urea-formaldehyde, epoxy-amine and nylon formulations.

Suggested applications include a variety of industrial and consumer product uses, including plastics, lacquers and paints, textiles, adhesives, packaging materials and paper-coatings.

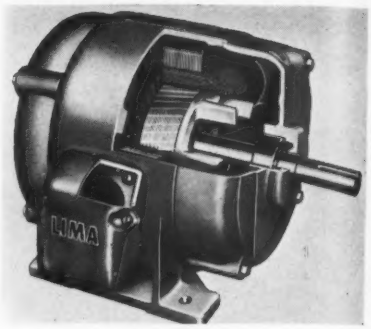
Dyestuff and Chemical Div., General Aniline & Film Corp., Dept. PVP, 435 Hudson St., New York 14, N. Y.

ELECTRIC MOTORS

Cast Iron Frames

Redesigned to meet new NEMA specifications, new dripproof general purpose motors feature fully seasoned cast iron frames with integrally cast feet to assure the highest degree of rigidity in mounting without stator distortion. These new dripproof motors are available in ratings from 1 to 150 hp; frame sizes 182 thru 505.

Other features include, solid die cast rotors with dual integrally cast cooling fans; entire rotor assembly is dynamically balanced. Product is Mylar insulated throughout for high dielectric strength and compactness. Accurately machined registers and bearing fits in the cast iron end bells. Specially designed steel baffle plates, deeply drawn, are provided in the end bells for extra protection to the windings and coils. The dripproof enclosure which provides positive protection against dirt, flying chips and dripping liquids, is furnished throughout the entire frame size range. Double width sealed ball bearings require no lubrication or other maintenance. Diagonally split cast aluminum connection boxes are equipped with cadmium plated cover screws; these roomy connection boxes may be rotated for easy connecting.



LIMA

Motors operate continuously at a rated temperature rise of 40°C. They are available for 3 or 2 phase, in all standard frequencies and commercial voltages below 600.

Lima Electric Motor Co., Inc., Dept. PVP-314, Lima, Ohio.

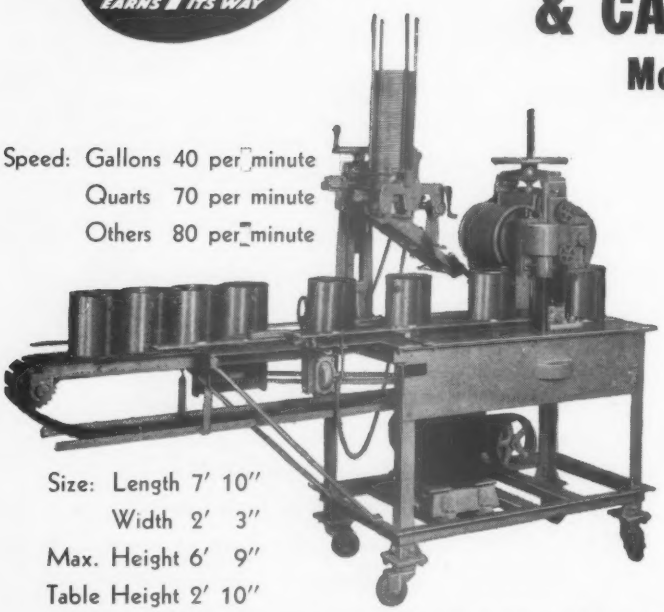
WATER SOLUBLE RESIN

Quick Dissolving

A new quick-dissolving water-soluble resin, Cellosize hydroxyethyl cellulose QP-4400, is now available commercially. The new grade of hydroxyethyl cellulose can be stirred into water solution almost as easily as sugar. There is no agglomeration as is the case when other water-soluble resins are stirred into water.

Cellosize QP-4400 is a nonionic thickener that is compatible with anionics, cationics, and nonionics. It is an efficient protective colloid and stabilizer and has a high

HIGH SPEED AUTOMATIC
Elgin EARNS ITS WAY
CAP DROPPER & CAPPER
Model "S"



Speed: Gallons 40 per minute
Quarts 70 per minute
Others 80 per minute

Size: Length 7′ 10″
Width 2′ 3″
Max. Height 6′ 9″
Table Height 2′ 10″

THE remarkable new Elgin Model "S" High Speed Cap Dropper and Capper answers the need for ultra high speed packaging of products in cans using double or triple friction plugs. Unusually compact and with minimum space requirement, the Model "S" is designed for easy coupling with any type of filler. The Elgin High Speed Cap Dropper and Capper automatically applies plugs to containers sized from one thirty-second to and including gallons.

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tolerance for electrolytes. In water, Cellosize QP-4400 is non-gelling even at the boiling point of the solution. It has high thickening action, even in low concentrations, and is low foaming in water solutions.

Paints thickened with Cellosize QP-4400 have excellent scrub-ba bility. Shelf life and thermal stability are also improved through use of Cellosize QP-4400. The thickener can be dry-blended or ground with pigments because it allows instant color development when phthalocyanine colors are used to tint the hot latex paint system.

Cellosize QP-4400 can also be used in other thickening applications, such as topical drug preparations, cosmetic formulations, print pastes for the printing and textile industries, and agricultural chemicals.

Union Carbide Chemicals Co., Dept. PVP, 30 East 42nd St., New York 17, N. Y.

PAINT EMULSION
Pigment Binding Power

Darex Everflex MF, a new microparticle vinyl acetate copolymer emulsion which provides superior performance of vinyl emulsion paints over "green" plaster and exterior masonry, has been introduced.

The new emulsion has a particle size as small as, if not smaller than, any vinyl emulsion marketed today, the company says.

The particle size, together with a unique emulsifying system, provide excellent water resistance, pigment binding power, and film consolidation qualities. Freeze-thaw resistance is outstanding.

Everflex MF has very high stability in the presence of calcium ion, a cause of color variation sometimes encountered when applying emulsion paints over green plaster.

Films cast from Everflex MF have high resistance to efflorescence, crystallized water-borne salts which have leached through the paint film from masonry substrate.

Dewey and Almy Chemical Div., W. R. Grace & Co., Dept. PVP, Cambridge 40, Mass.

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Regular Prices
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Since their introduction by Williams six years ago, Kroma Reds have found increasing use in many products because they are the *cleanest*, and *brightest*, of all the synthetic iron oxide pigments . . . *yet they sell at standard prices!* Six shades are now made by the patented Williams process, ranging from the light salmon RO-3097 to the deep clean maroon RO-8097. You use them in oil paints, enamels, emulsion paints, leather finishes, floor coverings, textile finishes, concrete products—or wherever you need a bright, stable, permanent red. In case you have overlooked the Kromas, we suggest that you get in touch with us for technical literature and samples. Address Dept. 23, C. K. Williams & Co., 640 N. 13th St., Easton, Pa.

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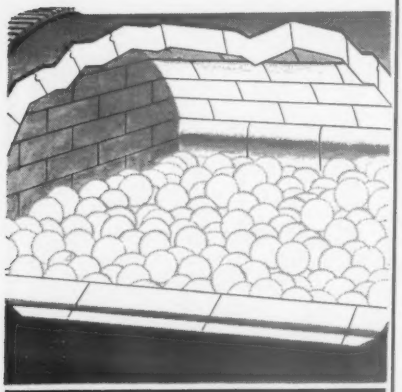

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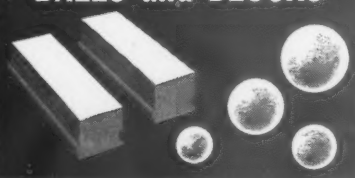

PORCELAIN
DIVISION
FERRO CORPORATION

NEW MATERIALS — EQUIPMENT

DISPERSE DYES
Fine Powders

Three new disperse dyes, are currently being made available.

Genacron Blue 3R and Genacron Violet BN offer related violet-blue shades in the company's special *Genacron* range of disperse dyes, recommended primarily for dyeing polyester fibers. The feature of the two products lies in their high color value, excellent buildup, and fastness to light, washing, perspiration, and hot pressing. The dyes are particularly well suited for deep blue and navy shades on dress goods and suitings.

Genacron Blue 3R yields bright reddish blue shades on polyester fibers, for self-shade dyeing or as an economical base or shading color for fast blue and navy tones in all practical shade depths.

Genacron Violet BN dyes a bluish violet hue, has properties similar to those of its companion product, and serves equally well as a base or shading dye.

The third new color, *Genacron Blue GGL* dyes an attractive, greenish blue shade on polyester fibers. The dye is highly suited for this purpose, exhibiting strong tinctorial value and buildup, very good stability to sublimation, and excellent fastness to light, washing, and perspiration. High heat stability permits dyeing by pressure or pad-heat curing methods as well as by carrier application. The clean, bright shade is especially useful for dyeing medium to heavy shades of blue, green, or navy for wearing-apparel fabrics.

The new dyes are supplied as uniformly fine, easily dispersible powders. Application of the dyes can be made by all conventional methods to stock, yarns, or piece goods of straight polyester-fiber goods or blends containing wool, cotton, or viscose rayon.

General Aniline & Film Corp., Dept. PVP, 435 Hudson St., New York 14, N. Y.

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distinctive
finish

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Formulated for use with practically all coating vehicles . . . for application by almost any coating method, Nacromer transforms ordinary coating materials into eye-catching "sales-feature" finishes.

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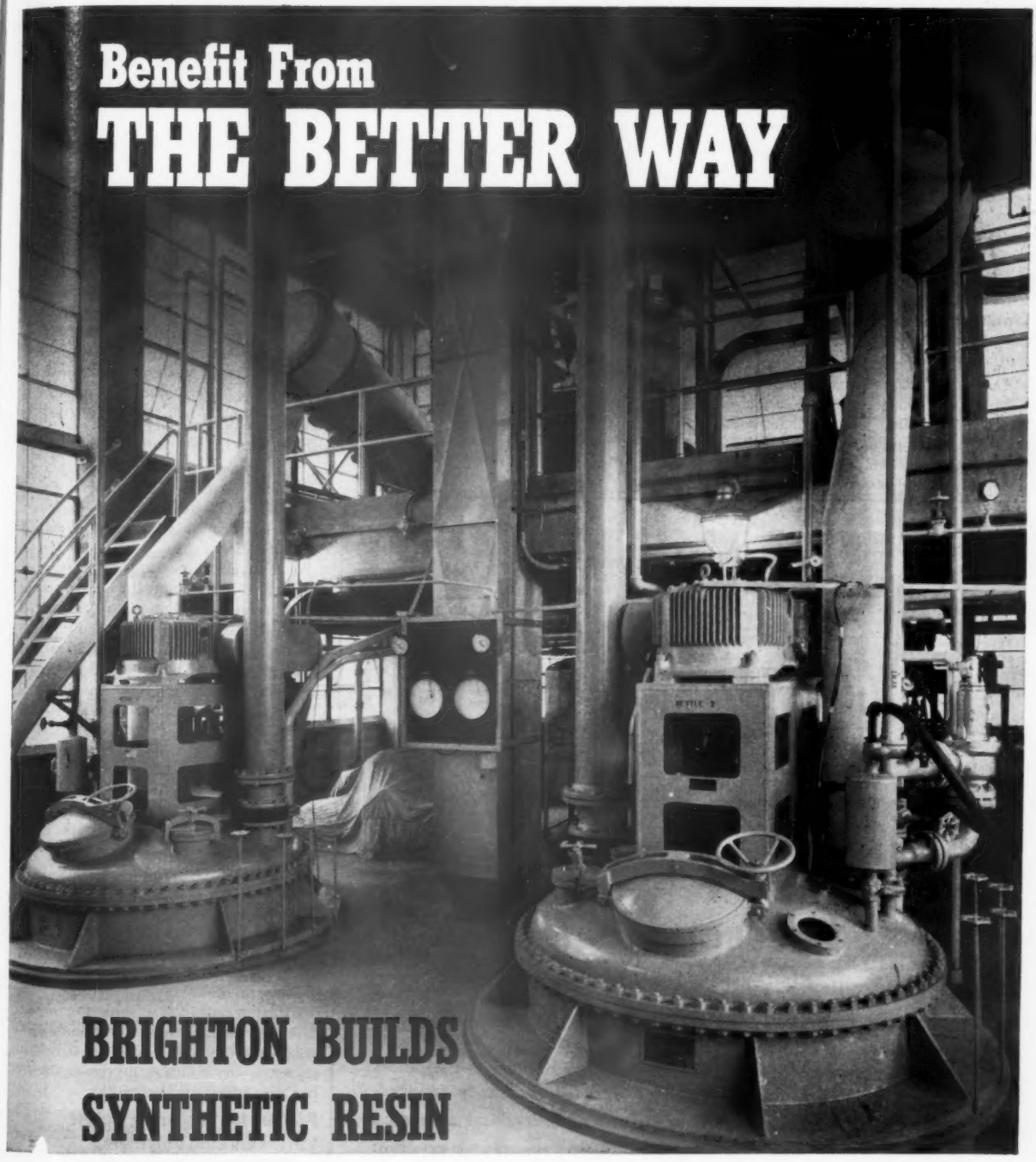

■ ■ ■ Brighton Reactors speed efficiency, lower processing costs in alkyd type resins. Nearly a half century is reflected in development of Brighton Reactors, so designed to handle a variety of alkyds, yet flexible enough to meet the demands of modern processing. Other basic components available include the condenser, decanter-receiver, thinning tank, heating plant, control board.

For "The Better Way" consult Brighton Engineers for complete details on our synthetic resin reactors.

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CORPORATION
820 STATE AVENUE · CINCINNATI 4, OHIO

PATENTS

Complete copies of any patents or trade-mark registration reported below may be obtained by sending 50c for each copy desired (to foreign countries $1.00 per copy) to the publisher.

Asphaltic Compositions

U. S. Patent 2,923,639. Clarence E. Wilkinson, Port Neches, Tex., assignors to Texaco Inc., a Corp. of Delaware.

A sprayable coating composition of vehicle and filler, said vehicle comprising from between about 50 and 70% by weight of the composition consisting essentially of air blown asphalt on the order of 120-190°F. ring and ball cutback with a light distillate to a viscosity within the range of 40-120 at 122°F. Saybolt Furol, said filler comprising between about 30 and 50% by weight of the composition and consisting essentially of a mixture of fine asbestos fibers and fine flat, plate-like mineral selected from the group consisting of mica, pulpulverized oyster shell and mixtures thereof, said asbestos in an amount between about 10 and 20% by weight of the composition, said mineral having a degree of fineness that will pass a No. 100 screen and constituting from about 10% to about 40% by weight of the composition, said composition being sprayable at moderate atmospheric temperatures under a maximum pressure of 320 p.s.i.

Impregnating Composition

U. S. Patent 2,926,096. Songe S. Sakornbut, Kirkwood, Mo., assignor to Monsanto Chemical Co., St. Louis, Mo., a corp. of Delaware.

A solution of a chlorinated phenol which consists essentially of from 20 to 65 parts by weight of the chlorinated phenol and from 35 to 80 parts by weight of a phosphoric acid ester of the following structure

wherein each of the R, R′ and R″ groups is selected from the group consisting of alkyl radicals having at least four carbon atoms, aryl radicals and alkaryl radicals, provided that the total number of carbon atoms will be from twelve (12) to twenty-five (25).

Emulsion Bodied Glyceride Oils & Vinylic Monomers

U. S. Patent 2,926,151. Joseph G. Kingston, Cleveland & Robert Frank Schwartz. Columbus, Ohio, assignors to The Glidden Co., Cleveland, Ohio, A Corp. of Ohio.

As a novel composition of matter, an aqueous, alkaline emulsion of rubbery, film-forming copolymerizate prepared by emulsion-polymerizing a homogeneous organic mixture containing about 20 to 95 parts of heat-bodied glyceride oil selected from the group consisting of drying and semi drying oils, said head bodies oil having a viscosity of at least 200 poises at 25°C. and about 5 to 80 parts of at least one monomeric copolymerizable vinylic compound, said glyceride oil and said vinylic compound together amounting to about 100 parts by weight, said emulsion polymerization being carried out at temperatures between about 125°F. and 200°F. with an alkaline, aqueous medium as the continuous phase and with said homogeneous organic mixture as the dispersed phase for a period of about 4 to 72 hours in the presence of a peroxidic polymerization catalyst; said monomeric copolymerizable vinylic compound being selected from the group consisting of styrene, viny toluene, myrcene, divinyl benzene and 2-vinyl pyridine.

Process for Preparing Stable Vinyl Chloride Polymers

U. S. Patent 2,921,046. Evert Johannes Arlman, Amsterdam, Netherlands, assignor to Shell Development Co., Emeryville, Calif.

A process for preparing polymers of vinyl chloride having improved stability to heat which comprises adding to an aqueous emulsion containing monomeric vinyl chloride and a free radical polymerization catalyst, from .005 mol to 8 mol per 100 mol of vinyl chloride of a stabilizing compound of the group consisting of cumene, benzyl chloride and triphenylmethane, and then heating the mixture to a polymerizing temperature.

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KELECIN 1081...a water dispersible lecithin specifically for emulsion paint systems

You get better color development...better flow ...better leveling! Grinding time is reduced. Paints have improved stability and increased shelf life! Your best lecithin dispersing agent in emulsion paints is Kelecin 1081!

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KELECIN 1081 SPECIFICATIONS

Acetone insoluble	50%
Acid value	25
Peroxide value	7
Viscosity (GH) @ 25°C.	35-45 sec.

SPENCER KELLOGG AND SONS, INC.
BUFFALO 5, N. Y.

Vinyl Resin Stabilized With Epoxy Compounds

U. S. Patent 2,294,582. Vinyl Resin Stabilized With Epoxy Compounds. Dennis H. Mullins, St. Albins & Benjamin Phillips & Frederick C. Frostick Jr., Charleston, W. Va., assignors to Union Carbide Corp., a corp. of New York.

A vinyl chloride composition comprising a vinyl chloride resin containing compounds of the class characterized by the general formula:

wherein R_2 through R_6 represent members selected from the group consisting of hydrogen atoms and lower alkyl groups and the groups $C_nH_{2n-1}O$ each, respectively and separately represent epoxyalkyl groups composed of carbon, hydrogen and one oxygen atom attached to vicinal carbon atoms containing n carbon atoms, n-1 hydrogen atoms wherein n represents a positive integer in the range of from 2 through 17.

Resin Drying Catalysis

U. S. Patent 2,962,148. Rene Leclercq. Woluwe Saint-Pierre & Rene Paquet Braine-le Comte, Belgium assignors to Union Chimique Belge S. A. Brussels, Belgium, a corp. of Belgium.

An air-drying varnish composition consisting essentially of (1) an organic solution of a resin, said resin being obtained by heating (*a*) at least one diisocyanate of the general formula OCN—R—NCO wherein R is a member selected from the group consisting of aliphatic and aromatic bivalent radicals with (b) a mixture of at least two monohydroxylated compounds selected from the group consisting of allyl, benzyl, furfuryl, and abietyl alcohols, phenol and nonylphenol and (2) from 0.5 to 20% by weight of a catalytic drier containing tin and selected from the group consisting of tetrabutyl stannate, dibutyl tin dilaurate and di-n-octyl-tin bis-(2-ethyl hexanoate).

Interpolymers of Blown Oils & Viny Mixtures

U. S. Patent 2,926,153. Roger M. Christenson, Richland Township. Allegheny Count., Pa. assignors to Pittsburgh Plate Glass Co., Allegheny County. Pa. A corp. of Pa.

A method of forming a homogeneous xylene soluble interpolymer product suitable for use as a coating medium, which comprises heating in the substantial absence of diluents and under pressure at least equal to that autogenously generated by the reaction at a temperature in a range of about 50°C. to about 100°C., and in the substantial absence of added diluents for a period of about 1 to about 30 hours, an interpolymerizable mixture consisting essentially of (A) about 10 percent to about 30 percent by weight of blown, unsaturated glyceride oil of a peroxide value of about 25 to about 700, and being selected from the class consisting of blown linseed oil and blown soya oil, (B) about 70 percent to about 90 percent by weight of a monomer system consisting essentially of vinyl chloride and vinyl acetate, the vinyl chloride being present in an amount of about 70 percent to about 90 percent by weight of the total monomer system, the rest of the monomer system being vinyl acetate, and (C) an organic peroxide which is a catalyst of interpolymerization, heating being continued until at least 30 percent by weight of the total monomers have combined.

Electrostatic Spray Arrangement

U. S. Patent 2,930,350. Otto Gengenbach and Horst Schene, Sindelfingen, Kreis Boeblingen. Germany, assignors to Daimler-Benz Aktiengesellschaft. Stutt-Unterturkheim, Germany.

An installation for electrostatically coating large objects with coating material including a gantry-type metallic frame, said frame having generally vertically extending side supports and a horizontally extending top support, electric spray means including a spray electrode mounted on each of said supports, each of said spray means including means for supporting it on said frame including an insulating arm carrying said spray means, an insulating screen disposed rearwardly of each spray electrode between the frame and the spray means, said insulating screen being provided at least on one side thereof facing said spray electrode with a metallic layer that is thin relativeits width and breadth and of large area relative the size of said spray electrode, electric means including a high voltage source for providing a high voltage electrostatic field between each said spray means and an object located

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Baker's high-quality additives, THIXCIN® and M-P-A®, are basic insurance for a high-quality paint.

When your paint contains one of these Baker additives, you insure no settling . . . no sagging. You also insure flow control and easy brushing.

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These additives were developed solely by Baker. No other additives are backed by the same know-how, experience and service. Ask the paint man who uses them.

6644

THE Baker CASTOR OIL COMPANY
ESTABLISHED 1857
Bayonne, New Jersey

centrally of the frame to be electrostatically coated, and means for connecting said metallic layer facing said spray electrode to said high voltage source with the same polarity as said spray electrode.

Methods of Depositing a Silver Film

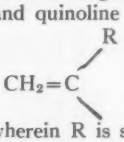
U. S. Patent 2,924,535. Vincent J. Schaefer. Schnectady. N. Y., assignor to General Electric Co., a corp. of New York.

A process of preparing a metallic silver, mirror-like coating on a selected area of the surface of a solid which comprises coating said area with an aqueous solution containing polyvinyl alcohol and a water soluble silver salt and heating the coated area to a temperature in the range of 75-200°C. until the silver coating is formed.

Flexible Coating Compositions For Metal

U. S. Patent 2,927,864. James A. Shotton, Bartlesville, Okla., assignor to Phillips Petroleum Co., a corp. of Delaware.

A composition suitable for coating metal surfaces comprising (1) a liquid polymer prepared from a monomer system comprising, based on 100 parts by weight of monomers, 70 to 98 parts of a conjugated diene containing 4 to 12 carbon atoms and 30 to 2 parts of a compound selected from the group consisting of pyridine and quinoline containing a



substituent wherein R is selected from the group consisting of hydrogen and methyl, said liquid polymer having a viscosity in the range of 100 to 6000 Saybolt Furol seconds at 100°F., and (2) a hydrocarbon solvent boiling the range of 175 to 400°F., the amount of said solvent being sufficient to give a solution containing 10 to 70 percent by weight of non-volatile matter.

Hot Paint Dip Tank

U. S. Patent 2,930,349. Harry H. Jones, Huntington Woods, Mich., Assignor by Mesne assignments, to E. I. du Pont de Nemours and Co., a corp. of Delaware.

In a dip painting apparatus comprising a dip tank adapted to be filled with hot paint containing a solvent which is volatile at paint temperature, cooling means above the paint level to condense vaporized solvent, a reservoir adjacent the end of said dip tank into which paint overflows from said dip tank, means for heating the paint and means for returning paint from the reservoir to the dip tank, the improvement comprising additional cooling means disposed within said reservoir above the level of the paint therein and below the level of the paint in the dip tank, whereby solvent vapors within sai dreservoir are rapidly condensed, thu scausing solvent vapors above the paint in the dip tank to flow over the end of the dip tank into said reservoir.

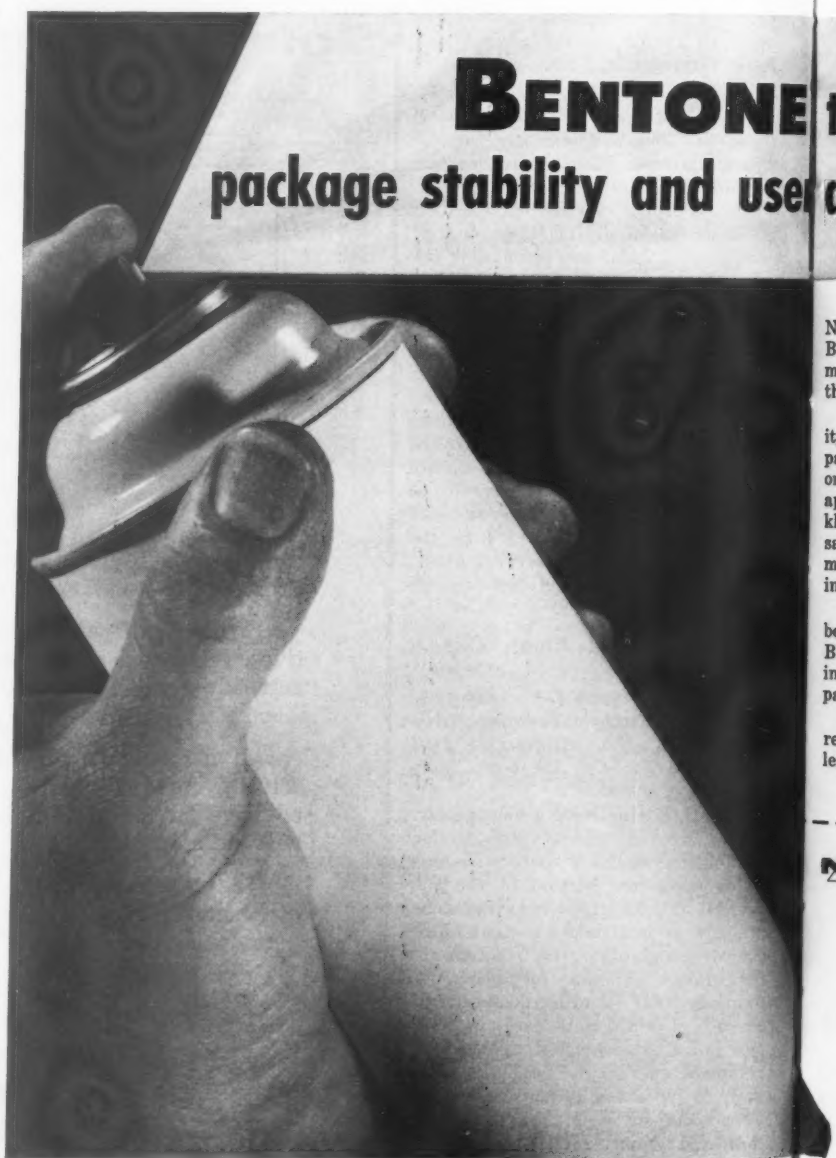
Coating Compositions And Methods of Preparing Same

U. S. Patent 2,927,863, Ralph Marotta, Malden and Carl R. Martinson, Wakefield, Mass., assignors to Monsanto Chemical Co. St. Louis, Mo., a corp. of Delaware.

A composition of matter comprising a coating composition consisting essentially of a film-forming solid dissolved in an organic solvent therefor and having incorporated therein a silica gel flatting agent in an amount sufficient to reduce the gloss of films prepared from said composition and a surface active condensation product of 7 to 20 molecular proportions of ethylene oxide and 1 molecular proportion of an aliphatic monohydric alcohol having from 8 to 16 carbon atoms and selected from the group consisting of alkyl primary monohydric alcohols and alkyl secondary monohydric alcohols, said condensation product being soluble in said solvent to the extent of at least 0.05% by weight and being present in an amount sufficient to substantially prevent hard settling of said flatting agent.

Paraffin Emulsion For Protection of Masonry Surfaces During Setting

U. S. Patent 2,928,752. Gunter Felletschin, Dusseldorf, Germany, assignor to



Dehydag. Deutsche Hydrierwerke G m.b.H., a corp. of Germany.

An aqueous emulsion adapted for use as a protective coating on masonry surfaces during the setting period consisting essentially of water, 2-50 weight percent paraffin, about 10 weight percent of an addition product of 5-50 mols of ethylene oxide and 1 mol oleyl alcohol, 2-20 weight percent of an oleic acid amine salt having a chain length of 12 to 18 carbon atoms in the amine radical, about 4 weight percent of at least one fatty alcohol having 16 to 20 carbon atoms, and from 0-10 weight percent mineral oil.

Method of Tinting Surface Coverings

U. S. Patent 2,927,862. Charles W. Welch, Kansas City Mo., assignor to Welco Manufacturing Co., Incorporated, Kansas City, Mo., a corp. of Missouri.

A method of reproducibly and uniformly tinting a relatively small amount of the components of an initially dry, powdered, cold water paint comprising the steps of grinding an amount of a dry water-insoluble, finely divided coloring pigment with calcium carbonate and a quantity of dry solid surface tension depressant capable of completely dispersing said amount of pigment in a predetermined proportion of water; introducing the dryadmixture into said proportion of water to present a tinting slurry; and thoroughly admixing the tinting slurry with a predetermined amount of said powdered cold water paint.

thixotropic gelling agents add appeal to your aerosol paints

Now...with the four National Lead BENTONE gellants...you can assure more predictable, more controllable thixotropic spray from aerosol packs.

All four contribute to package stability, prevent hard pigment settling. And paints made with them go on well, stay on *right*. No cobwebbing or stringing on application. No orange peeling or wrinkling on drying. Color, film thickness, sag and runoff are nicely controlled. Pigment, vehicle and extender are locked into a close-knit structure.

Each BENTONE gelling agent has been developed to do specific jobs well. BENTONE 34 gellant finds wide use in conventional low to medium polarity paints.

BENTONE 38 gellant is specifically recommended for finishes based on odorless solvents.

Then there's BENTONE 27 gellant, which is attracting attention because of its value in high polarity finishes, such as lacquers and vinyl paints.

BENTONE 18-C has found use where the problem is primarily pigment packing, rather than improvement of application properties.

The BENTONE gelling agents are not restricted to paints alone. They will benefit any aerosol application where keeping solids in suspension is a major problem – cleaners, polishes, waxes and buffing compounds, for example.

One of National Lead's versatile thixotropic BENTONE gellants may be just what's needed to put more "buy appeal" in your aerosol-packaged products. Which one to use? That depends in large measure on the application you have in mind. For detailed information or technical assistance in any application, call, write or wire us.

NLC

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In Canada: Canadian Titanium Pigments Limited, 1401 McGill College Ave., Montreal
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(Gellants)

Chemical Developments of National Lead Company

Aqueous Dispersion of Synthetic Polymers

U. S. Patent 2,928,797. Marion O. Brunson and William M. Gearhart, Kingsport, Tenn., assignors to Eastman Kodak Co., Rochester, N. Y., a corp. of New Jersey.

A wax composition comprising (A) 16-19% oxidized thermally degraded polyethylene having an acid number of 8-12 obtained by oxidizing polyethylene which has been thermally degraded to a molecular weight of 2000-4000 from a molecular weight of 10,000-30,000, (B) 4-6% of a resinous material selected from the class consisting of bleached, dewaxed shellac and maleic modified rosin which are soluble in ammonia, (C) 14-17% polymethacrylate obtained by emulsion polymerization, (D) 45-55% of a polymer of styrene, divinyl benzene and acrylonitrile having a molecular weight of over 150,000 and a particle size of less than 0.01 micron obtained by emulsion polymerization, and (E) 8-12% of a mixture of oleic acid and a plasticizer.

Protective Coating Compositions

U. S. Patent 2,927,036. Alton Linwood Seaver 111. Weymouth, Mass.

A protective coating composition consisting essentially of 10 to 25% cellulose acetate butyrate dispersed in organic solvent, said composition also containing from about 8 to 18% of plasticizer and 0.2 to 1.5% of soybean lecithin and forming a substantially clear, stable film upon drying which is readily removable from the surface to which it is applied.

Coated Metals

U. S. Patent 2,927,046. Donald S. Andrade, Parma Heights, Ohio. Assignor to Parker Rust Proof Co., Detroit, Mich., A corp. of Mich.

A composition for coating metallic surfaces which consists essentially of tertiary butyl alcohol and chromic acid, said chromic acid being dissolved in said tertiary butyl alcohol in an amount between about 1% and saturation.

Applying A Coating Polyethylene

U. S. Patent 2,927,047. Felix Schulde, Bad Soden (Taunus) and Werner Sommer and Dietrich Schleede, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main Germany, a corp. of Germany.

In a process for the production of an adherent coating on a polymeric surface prepared from a polymer selected from the group consisting of polyethylene, polyproplyene, and an ethylene-propylene copolymer, the steps of applying a solution of an atactic polymer of propylene as a binding agent to said surface and subsequently solidifying said solution on said surface.

TECHNICAL Bulletins

FILTERS

All-stainless-steel filters and filter elements are described in a new free bulletin. The bulletin lists the availability of porous stainless steel *Surfamax* filters designed for maximum filter surface in minimum volume.

Stock and non-stock filters and elements are listed. Methods of specifying filter area requirements are shown, with special emphasis on flow rates and porosity grades. Characteristics of high pressure filters and other specialized filters and filter elements are described.

Micro Metallic Div., Pall Corp., Dept. PVP, Glen Cove, N. Y.

PAINTED MASONRY

The causes of efflorescence and early chalking on painted masonry surfaces, and effective methods for overcoming and preventing such deterioration are discussed thoroughly and authoritatively in a 48-page publication.

The extensively illustrated booklet is based on a technical paper that Gerould Allyn, coatings expert, presented at the 37th annual meeting of the Federation of Paint and Varnish Production Clubs. The paper won first prize in the open competition of the 1959 Roon Foundation Awards. Paint manufacturers, architects, specification writers, industrial and commercial builders, building maintenance chiefs and researchers investigating the properties and performance of masonry will find this work useful.

The booklet defines efflorescence as the deposit of crystalline salts on the surface and in the pores of masonry. Common sources of efflorescent salts are the masonry itself, coats of cement paint, lime, ocean spray, and hard ground waters. These efflorescent salts may attack paints either during application or later in the life of the paint film and cause premature chaling.

Because paint formulation is one of the more important factors in efflorescence, it is given extensive coverage in the publication. The four major types of emulsion vehicles used for exterior masonry paints are compared for resistance to alkali, moisture, heat, and ultraviolet light. Other subjects include: film swelling, film coalescence, paint stability in the presence of soluble salts, pigmentation, pigment volume concentration, pigment dispersion and flocculation, and the effects of titanium dioxide and extenders on chalking.

Rohm & Haas Co., Dept. PVP, Washington Square, Philadelphia 5, Pa.

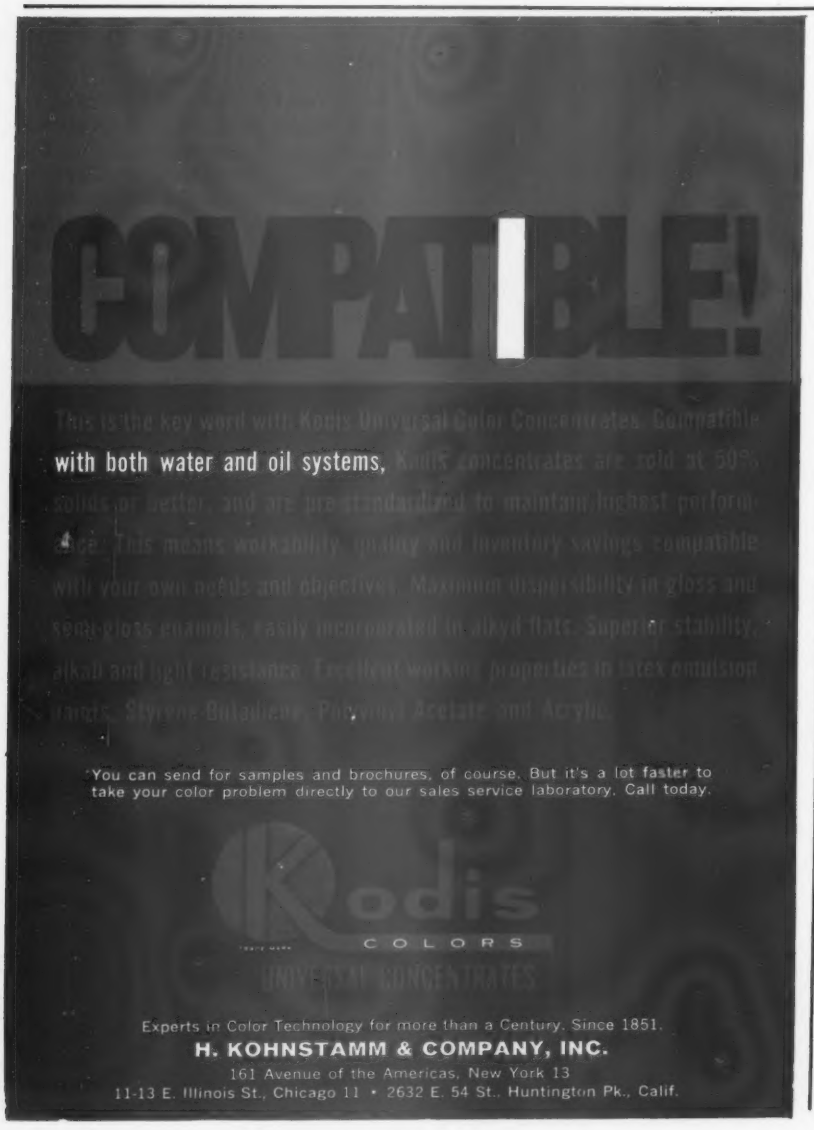
SILICA AEROGEL

New technical data sheet, I-188, has been issued on the use of *Santocel FR-C*, an improved silica aerogel flatting agent, in oil-based varnishes.

The product, which the company says has a 10 per cent to 20 per cent greater flatting efficiency than similar products previously obtainable, is a microscopically divided silica aerogel, pure white and free-flowing. It has been specifically tailored to provide more effective and economical flatting of oil-based varnishes.

The data sheet describes the physical and chemical properties of the product as well as dispersion and formulation procedures and performance comparisons.

Inorganic Chemicals Div., Monsanto Chemical Co., Dept. PVP, 800 North Lindbergh Blvd., St. Louis 66, Mo.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INDUSTRIAL TRUCKS

New twelve-page brochure makes it possible to estimate, in a matter of minutes, the costs incurred by industrial trucks. So far as is known, this is the first time that nomographs or alignment charts have been available to show costs of depreciation, operation, and maintenance accurately for both gasoline-powered and battery-powered trucks. After very little study, anyone with the basic data on his plant operation can arrive at a reliable cost estimate for each factor in a minute or less.

To perform the complete estimation, the truck user will need to know the purchase price of the trucks, the useful life to be expected, gas and oil consumption (in the case of gas trucks), the maintenance labor wage rate and replacement part costs. Since some or all of this information may not be readily available for every plant, the brochure includes tables and values for all these factors based on known prices and surveys of all types of truck operations.

As a result of these changes, today's typical plant situation leads leads to a 40 to 50 per cent saving in favor of battery power for industrial trucks.

Lead Industries Assn., Dept. PVP, 292 Madison Ave., New York 17, N. Y.

CALCIUM SILICATE

Eight specific ways in which calcium silicate gives outstanding performance in exterior oil-based house paints at lower cost, as proved in more than seven years of extender evaluation, are discussed in a new 8-page booklet. By featuring the points listed below, the firm shows how and why its product can help make premium quality paints at less than premium cost.

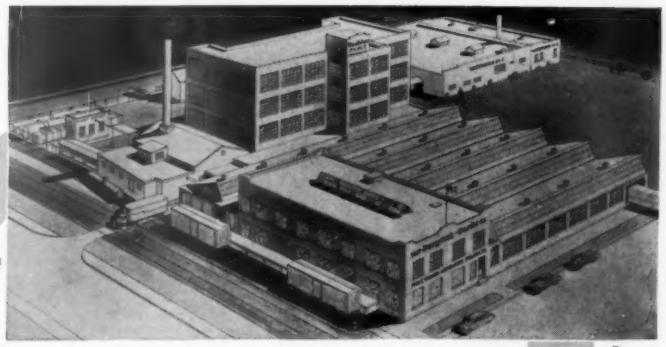
The booklet claims the following: 1) Superior durability of both white and colored house paints is proved by extensive panel tests, and complete exposure data (with photographs) on 11 test houses subjected to country-wide climates. 2) Savings of up to 5c per gallon in over-all raw material costs, with better durability, are shown for paint containing calcium silicate vs. paint made with talc, in six year exposures. 3) Photographs of paint films, before and after 3 years' exposure, show better leveling with the company's product. 4) No cracking in anatase or rutile TiO_2 systems containing either leaded or lead-free zinc oxide (upheld by all panel and test results to date) is discussed in relation to the strong acicularity of Wollastonite. 5) High brightness and brightness retention is tabulated. Also discussed are 6) the good tint retention the product imparts to colored house paints and 7) the easy, smooth brushing characteristics of the paint. Finally, 8) settling characteristics of the product vs. talc vs. dry-ground calcium carbonate are tabulated to show the superior can stability of paints formulated with calcium silicate.

Minerals & Chemicals Div., Godfrey L. Cabot, Inc., Dept. PVP, 125 High St., Boston 10, Mass.

COATING SYSTEMS

An informative new brochure which describes a number of protective maintenance coating systems and matches them with specific application problems is now available.

Incorporating eye-catching application photographs, the new brochure is written in non-technical terms for maximum reader interest. Each page carries an index tab which indicates where a particular system should be applied. The copy backs up these tabs and



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explains the outstanding features of each system, suggests end uses, and gives a brief mention of the colors available.

A unique feature of the new brochure is a pocket on its back cover which contains data covering the results of three years of corrosion tests in simple, concise form.

The Glidden Co., Dept. PVP, 900 Union Commerce Bldg., Cleveland 14, Ohio.

DUST FILTER

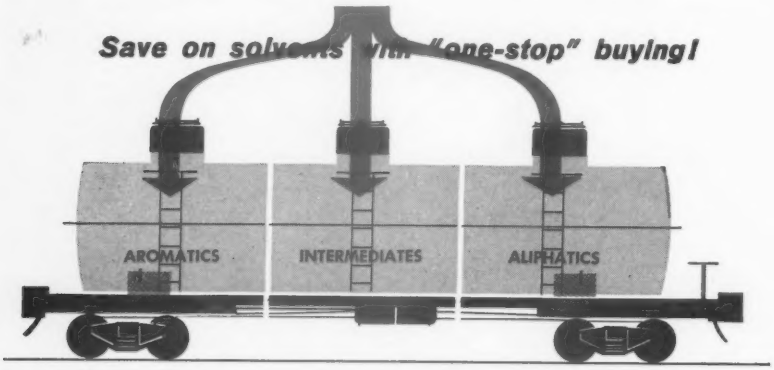
New, eight-page bulletin contains detailed information about the newly improved design "RJ" dust filter.

The bulletin describes how the new "RJ" filter, with only three moving parts, filters and recovers dust with top efficiency from airstreams lightly or heavily loaded with extremely fine, coarse, abrasive or non-abrasive dusts.

Included are details of the simplified method the improved "RJ" utilizes for maintaining porosity of the filtering media. Operating cost savings and versatility of the new "RJ" also are pointed out.

Specifications and dimensions of single and multiple unit installations are given for standard fan locations and reverse air pressure blowers. Photos show construction details and typical installations.

The Day Sales Co., Dept. PVP, 810 Third Ave., N. E., Minneapolis 13, Minn.



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VENT SYSTEMS

Conservation Bulletin No. 6017 illustrates an all-weather tank vent that is pre-engineered to keep gasoline, solvent and chemical tanks under low pressure or vacuum at all times thereby reducing evaporation losses sufficiently to pay for itself in a few months.

Conservation Bulletin No. 6029 illustrates a "Dry-Air" venting system which incorporates in the vent line, a dryer using Lump Anhydrous Calcium Chloride as a dessicant to remove 100% of moisture from atmosphere entering tanks during relief of vacuum caused by product withdrawal or thermal contraction.

Midland Specialties Co., Dept. PVP, 4801 South on Richmond St., Chicago 32, Ill.

LATEX PAINTS

New 12-page brochure titled *How To Improve Your Latex Paints*, has just been issued. Profusely illustrated throughout, the brochure shows tests made with plasticizer surfactant #77 and #99, which indicate improvements in wet abrasion resistance, flexibility retention, low temperature coalescence, scrub resistance and curing speed-up. These tests apply to PVA homopolymer and PVA copolymer paints, acrylic PVA copolymer paints, acrylic emulsion and butadiene emulsion paints.

Advance Solvents & Chemical, Dept. PVP, 500 Jersey Ave., New Brunswick, N. J.

POLYVARIABLES

Polyvariable Experimentation, newly developed methods for experimentation in 10, 20, or more variables, is described along with available training programs and literature in a four-page brochure.

Statistical Engineering Institute, Dept. PVP, 8 Fuller Road, Wellesley, Mass.

CENTRIFUGAL PUMPS

Four-page condensed bulletin illustrates and describes centrifugal and turbine type pumps—single and multiple stage, flexible and close coupled, horizontal and vertical. Booklet includes brief description, features, typical applications, capacity and head range for each type of pump.

Aurora Pump Div., New York Air Brake Co., Dept. PVP, Aurora, Ill.

New Books

Chemical Coatings Section

Published by National Paint Varnish and Lacquer Assn., Washington, D. C. 337 pages. Price $3.00.

The fourth section of the NPVLA'S *Hidden Power* sales training program is now off the presses and available at Association headquarters in Washington. Book represents the first detailed material ever published specifically for the training of chemical coatings salesmen.

Book's seven main chapters cover such subjects as company philosophy, policies and backgrounds, the selling and service functions, forms and paperwork, and other general subjects. While it will serve as a review in part for some veteran salesmen, it will prove an educational eye-opener to most for the book's major chapters are broken down into detailed examinations of a multitude of important subjects, from pin-pointing the salesman's business, civic and personal obligations to cementing new accounts.

Industry leaders have already hailed the new chemical coatings section as one of the most important achievements ever recorded in the history of the paint, varnish and lacquer worlds. It's an easy reading, easy to understand volume that's concisely worded, well illustrated and minus the superfluous. It's success is already apparent in the area where it counts the most: early orders from chemical coatings manufacturers in higher than anticipated numbers.

Part 8. Paint, Naval Stores, Aromatic Hydrocarbons, Gaseous Fuels, Engine Antifreezes — *Published by American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa. 252 pages. Price $4.00.*

Includes 43 standards for pigments drying oils, fatty acids, solvents, shellac, varnish and resins, paints, rosin, gaseous fuels, industrial aromatic hydrocarbons, and engine antifreezes.

Polyester Resins

Published by Reinhold Publishing Co., New York City.

A comprehensive presentation of the rapidly accelerating unsaturated polyester resin industry is now available.

The new book was written by John R. Lawrence, product manager-plastics, for The Glidden Co. It covers all aspects from historic background, chemistry, curing mechanisms and manufacturing to techniques used in processing the resins for use in reinforced plastics, casting and coating applications.

Uses for the versatile polyesters fall in a broad spectrum from boats to missile bodies, and the author presents them in concise form. Particular emphasis is given to formulating resins for special properties such as weathering and flame resistance.

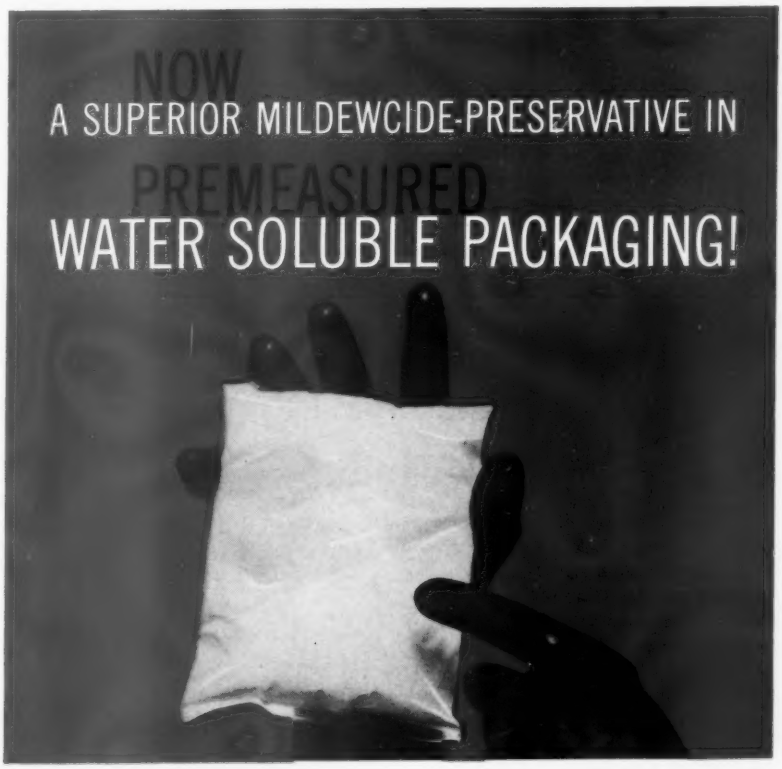
The new book features a chapter on coating applications which is one of the most complete discussions published on this relatively new use for polyester resins. The appendix includes a tabulation of the basic characteristics of the standard resins manufactured by the major resin suppliers together with related reference material. Numerous tabulations, figures and illustrations contribute to the book's usefulness to technical and non-technical readers in fields both directly and indirectly associated with the use of polyester resins.

Handbook of Area Sampling

By John Monroe and A. L. Finkner. Published by Chilton Co.—Book Division, 56th and Chestnut Sts., Philadelphia 39, Pa. 64 pages. $3.

The threefold purpose behind this book is: (1) to bring together the various definitions and procedures involved in the construction of an area frame; (2) to illustrate the use of the frame in drawing a random sample; and (3) to show the adpatability of the materials to several commonly used sample designs.

John Monroe is head of the Survey Operations Unit in the Institute of Statistics at the University of North Carolina. A. L. Finkner is professor in the Department of Experimental Statistics in charge of the sampling section of the Institute of Statistics at North Carolina State College. Both are members of the American Statistical Assn.



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ABSTRACTS

Use of Esterification Catalysts in the Preparation of Esters of Epoxy Resins

By F. E. Reed, Jones-Dabney Co., Division of Devoe and Raynolds Co., Inc., Louisville 8, Ky.

Eight additives were studied for use as esterification catalysts in the preparation of a typical epoxy resin ester under controlled laboratory conditions. Films of the resulting esters were evaluated for drying speed, water resistance, and alkali resistance. The formulation studied had a non-volatile composition of 40% dehydrated castor fatty acids, 60% of a 100°C. melting point epoxy resin having a low "sodium" content.

Experimental data from the esterification rate studies show that small increments of the additives influence to a marked degree the final viscosity and acid number obtainable. This is probably accomplished primarily by directing the course of the reaction toward the carboxyl-epoxide esterification reaction during the early stages, thus limiting viscosity increase due to the formation of high molecular weight resin polymers via an esterification reaction.

From an over-all standpoint a zirconyl compound and sodium benzoate were the best of the additives studied for use as general-purpose esterification catalysts. However, the data provide a selection of materials having varying degrees of catalytic activity and establish amounts for efficient catalysis.

It is suggested that epoxy ester formulations having improved uniformity of processing and film performance be obtained via the judicious use of esterification catalysts with epoxy resins having low and known "sodium" contents.

An Epoxy Resin From Phenolphthalein

By Elizabeth S. Lo, Permacel, Division of Johnson & Johnson, New Brunswick, N. J.

A new type of epoxy resin was prepared by reacting phenolphthalein and some of its analogs with epichlorohydrin in the presence of alkali. Experimental data indicate that the amount of water present during the alkaline condensation has a marked influence on the epoxy equivalent of the final product.

A few "co-epoxy" resins were prepared by reacting with epichlorohydrin a mixture of phenolphthalein with another phenolic compound such as bisphenol A, diphenol sulfone, phenol, and chlorinated phenols. These co-epoxy resins were shown to be considerably different in properties from resins prepared by mechanical mixing of the separate epoxy resins.

Both the epoxy and the co-epoxy resins can be cross-linked by anhydrides or amines. The cured resins have good heat resistance as well as solvent resistance. The resin when esterified with unsaturated vegetable oil acids gives varnish resins which with added driers readily cure at room temperature or at elevated temperatures.

Structure Versus Elevated Temperature Performance of Epoxy Resins

By John Wynstra, Alford G. Farnham, Norman H. Reinking, and John S. Fry, Research Department, Union Carbide Plastics Co., Division of Union Carbide Corp., Bound Brook, N. J.

Some polyphenols derived from commercially available raw materials were condensed with epichlorohydrin to provide examples of higher functional glycidyl ether-type epoxy resins. These experimental epoxy resins were evaluated as potential higher service temperature structural plastics after fabrication into dry lay-up glass cloth laminates. An indication of the upper use temperature limit of these materials was obtained from heat-aging tests and by studying the relationship of flexural strength with temperature.

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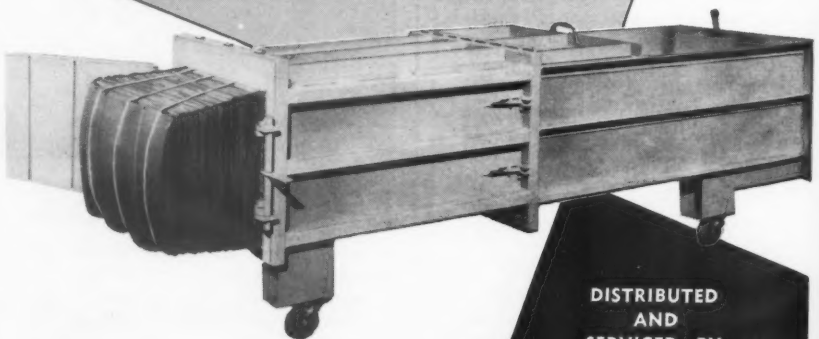

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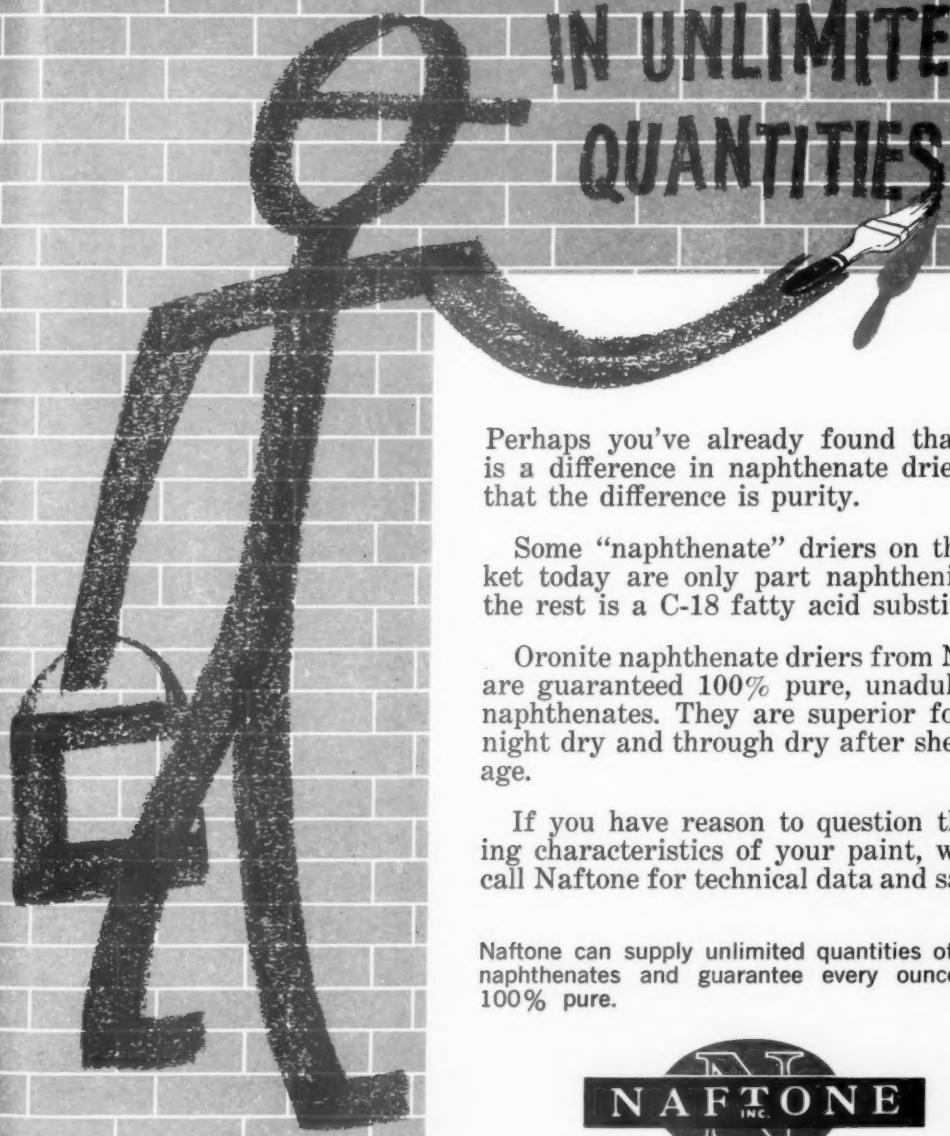

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New York Paint Society Establishes Roy H. Kienle Award

The New York Society for Paint Technology has established the Roy H. Kienle Award to honor outstanding members of its Technical Committee, in recognition of their service and contributions to the Society and the paint industry. The first awards were presented at the April 7th meeting of the New York Society.

The new award was named the Roy H. Kienle Award in honor of Dr. Roy H. Kienle, a past member of the N. Y. Society and recognized as one of the foremost scientists of this generation in the fields of protective coatings and pigments. He pioneered and created the first alkyd resins, which earned him the title of the "Father of the Alkyds." The discovery of alkyds basically changed the industry from an art to a science. Dr. Kienle was selected as the first Matiello lecturer in 1949, the highest honor bestowed by the Federation of Paint Societies. His Mattiello Lecture, *Physical Chemical Research in the Protective Coating Industry* set a high standard which other Mattiello lecturers have maintained. Dr. Kienle was an active member of the N. Y. Society's Technical Committee. It was fitting that this new award be named the "Roy H. Kienle Award," to honor a great scientist, whose accomplishments and achievements gave recognition to the important role of the technical and research men in our paint industry.

The first "Roy H. Kienle Award" was given to Dr. Roy H. Kienle, posthumously.

The Technical Committee held its February Meeting with Chairman Sidney Levinson presiding with 52 guests and members present.

The Subcommittees reporting progress were as following:

Mr. Lauren, Chairman of Subcommittee #64, *Exterior Masonry Substrata and Their Paint Requirement*, stated that they had discussed Gerould Allyn's paper *Efflorescence and Chalking of Painted Masonry Surfaces* to determine if the contents of the paper eliminated any work of the subcommittee, and had come to the conclusion it did not.

Mr. Cantor, Chairman of Subcommittee #68, *Effect of Ultraviolet Light on Nitrocellulose Lacquer*" summarized the work that had been done by his subcommittee. The results of the work indicated that there were variations in the effect of UV absorbers depending on variations of the raw materials. Further, it was the subcommittee's opinion that variations occurred when the sources of the ultra-violet light varied.

Mr. Malkin, Chairman of Subcommittee #70, *Materials Handling*, reported that this subcommittee had decided to break down the field into five categories: Incoming liquid raw materials; incoming dry and packaged raw materials; in-plant handling of liquids; in-plant handling of solids; and packed finished goods. It was agreed by the members of the subcommittee that they would study the materials handling problem in all of its phases.

Mr. Keegan, Vice Chairman of Subcommittee #72, *Anomalous Gloss Phenomena in Fresh Paint Films* reported that his subcommittee had studied the theory that focculation might be the cause of anomalous gloss behavior. In order to investigate this theory, a semi-gloss paint had been made and various additives, e.g. water, lecithin, cationic surfactants, etc., had been added in varying amounts. Drawdowns and brushouts were made of the resulting paints and the gloss of the films measured. From the results it was tentatively concluded that certain additives may function as deflocculating agents at low concentration and as flocculating agents at high concentrations,

B. Chatzinoff, Pres., N. Y. Sec. for Paint Technology and A. L. Lilla, Naftone, Inc.

C. Homer Flynn and Mrs. Roy H. Kienle, who accepted 1st award for her late husband.

W. E. Santoro, former Pres. of N. Y. Soc. for Paint Technology, one of the recipients of the Roy A. Kienle Award.

and that flocculation caused by the additives tested is either different in degree or in kind.

Mr. Zimmermann, Chairman of Subcommittee #73, *Studies in Corrosion*, announced that his subcommittee had agreed to study *Performance of Multiple Films vs. Single Thick Films in Anti-Corrosive Paint Systems*, and a general plan of work is to be set up.

Chairman Levinson announced that a new subcommittee to deal with the problem of the effect of grinding paint using different types of equipment is being formed. He also requested that ideas for new problems be sent to him. It was agreed, after discussion, that the subject of instrumentation in the coating industry be studied by a subcommittee of those who are expert in some field of instrumentation. This subcommittee would investigate the use of different techniques and instruments to solve the problems of other subcommittees, as these problems arise in their investigations of their work.

The Society also heard Allen G. Lilla of Naftone, Inc. and saw a fine film on *Polyester Chemical Coatings, Their Application, Formulation and Uses* during its April 7th Meeting.

Mr. Lilla's talk covered the following points: the three main application methods of polyester coatings; the difference between the wax versus wax-free; the uses such as wall coatings and furniture; the surfaces and surface preparation; and flow, or curtain coaters of polyester coatings.

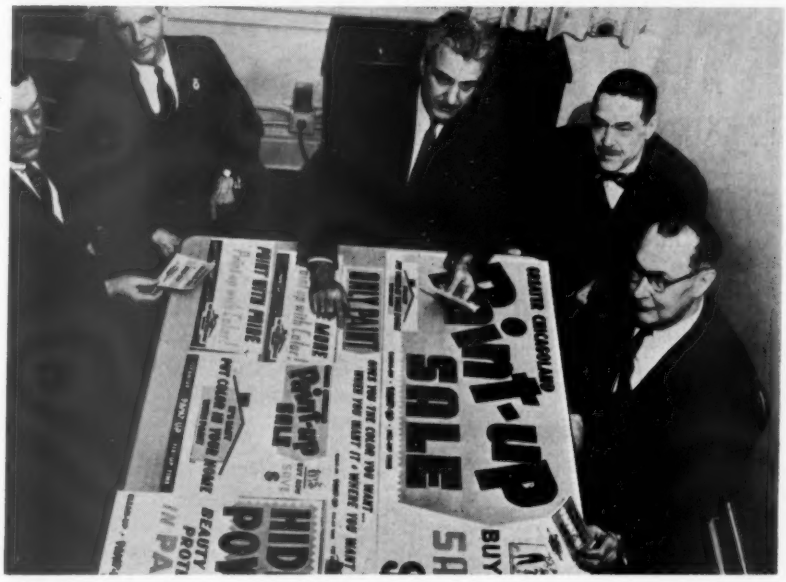
The talk was followed by a showing of an excellent colored sound film on the making and applications of Polyester Resins. The workings of an efficient German furniture factory using the latest automated and knockdown techniques using polyester coatings was included.

Givauden-Delawanna Moves

The Los Angeles office of Givaudan-Delawanna, Inc., and its associate companies, Givaudan Flavors, Inc., and Sindar Corp. moved to new and modern quarters. The new office is located at Suite #3, 6022 West Pico Boulevard, Los Angeles 35, Calif.

NEWS

NEWS OF COMPANIES, ASSOCIATIONS
TECHNICAL GROUPS
ITEMS OF GENERAL INTEREST



POINT of Purchase materials being distributed to Chicago area paint and hard ware outlets for display during 1960 "Paint-Up, Clean-Up, Fix-Up Time" are examined by Paint-Up Committee of Chicago Paint, Varnish, and Lacquer Assn. Left to right, Raymond J. Vonesh, executive secretary, CPVLA; G. Purdy Hall, merchandising manager, Enterprise Paint Manufacturing Co.; E. W. Ryburn, sales promotion manager, Elliott Paint & Varnish Co., chairman, CPVLA paint-up committee; Leo E. Schroeder, executive secretary, Paint and Wallpaper Assn. of Greater Chicago; James E. Creager, vice-president, Jewel Paint & Varnish Co., and president, CPVLA.

AMERICAN Mineral Spirits Co. honored two twenty-five year veterans of its Murray Hill, N. J. staff. Edward M. Toby, President (center), presented service awards and gifts to Anton Oliver (2nd from left), and James McElroy (right) at a luncheon at the Hotel Suburban, Summit, N. J.

Anton Oliver is Administrative Assistant to J. E. Capizzano (left), Vice President in Charge of Solvent and Chemical Sales. He started in the New York office and has seen service in the Order and Credit departments before becoming attached to the Sales Service staff.

James McElroy joined Amsco at its Chicago office upon graduation from high school, starting as office boy. He is now a member of the Accounting staff at the General Eastern Offices of this national marketer of solvents and chemicals. Second from right is W. M. Harris.

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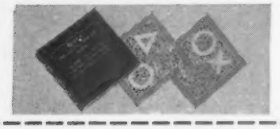

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NEWS

Gordon Research Conferences Set for June 13th

The Gordon Research Conferences for 1960 will be held from June 13, to September 2, at Colby Junior College, New London, New Hampshire; New Hampton School, New Hampton, New Hampshire and Kimball Union Academy, Meriden, New Hampshire.

The conferences were established to stimulate research in universities, research foundations and industrial laboratories. This purpose is achieved by an informal type of meeting consisting of scheduled lectures and discussion groups. Sufficient time is available to stimulate informal discussions among the members of each conference. Meetings are held in the morning and in the evening, Monday through Friday, with the exception of Friday evening. The afternoons are available for recreation, reading or participation in discussion groups as the individual desires. This type of meeting is a valuable means of disseminating information and ideas to an extent that could not be achieved through the usual channels of publication and presentation at scientific meetings. In addition, scientists in related fields become acquainted, and valuable associations are formed that often result in collaboration and cooperative efforts between different laboratories.

$20-Million Project Set for Minneapolis

Plans for a $20-million "package" of new downtown construction including a 16-floor Cargill Building of offices, a large motel, above-street plaza and restaurant, new Northwestern National Bank services, rooftop garden and swimming pool, shopping arcade and 1,000-car parking ramp, were announced.

Work will begin in the fall of 1960, with occupancy expected in 1962.

The project was described by spokesmen for Baker Properties, Inc., its original planner, and Northwestern Bank and Cargill, Inc., both major participants and future tenants.

Allied Chemical Announces Retirement of Leon W. Miller

The retirement of Leon W. Miller, Assistant and Consultant to the Executive Vice President and former Director of Chemical Sales, Plastics and Coal Chemicals Div., Allied Chemical Corp., has been announced. Mr. Miller, whose

Leon W. Miller

entire business life of over 44 years has been spent with Allied plans an extended European vacation upon retirement.

A graduate of Ohio Wesleyan University, Mr. Miller joined Allied as a building products salesman in Cleveland, Ohio in 1916. Upon his transfer to New York in 1930, he was named sales manager, specialties department, and within a year, manager of chemical sales for Allied's Barrett Div. In 1958 he was appointed Director of Chemical Sales for Plastics and Coal Chemicals Div.

W. M. Billing Gets Honor Award

The Commercial Chemical Development Assn. designated Dr. Wyly M. Billing as its Honor Award winner for 1960. This award is made annually for notable achievement in the field of commercial chemical development.

Wyly M. Billing is a vice president and member of the executive committee of Hercules Powder Co.

Dr. Billing is a graduate of Alabama Polytechnic Institute, Auburn, Ala. He later earned his doctorate degree through two and a half years of study in chemistry at Columbia University, and a year at the University of Cincinnati.

NEWS

Nuodex Products Co. Announces Technical Speaking Engagements

Nuodex Products Co., Elizabeth, N. J., a division of Heyden Newport Chemical Corp., has announced a schedule of technical lectures, papers and laboratory tours for the balance of the current year. Many of the engagements are directly connected with regular paint industry and educational programs. William J. Stewart, Director of Research & Development, will head a group of technical personnel from the Research and Development Laboratories of the company who will deliver the lectures and papers. The schedule which follows will be augmented during the balance of the year as additional committments are scheduled.

June,

North Dakota Agricultural College, Fargo, N. D.

The general subject will be paint mildew. The occasion is the Second Annual Symposium on Coating Materials and Raw Materials. W. J. Stewart will lecture.

July 15,

The University of Missouri School of Mines and Metallurgy, Rolla, Mo.

Dr. Chester Koda, Chief of Microbiological Laboratory, will lecture on Paint Mildew; Its Identification and Environmental Factors Affecting Control. The occasion is a Coatings Course for Architects, Painting Contractors and Maintenance Engineers.

•

CSMA Lists Program For May Meeting

Papers on the safe use of hydrocarbon propellants and powdered aerosols will be a feature of the 46th meeting of the Chemical Specialties Manufacturer's Assn. at Chicago's Hotel Drake, May 16-18.

Papers on pharmaceutical aerosols, sterile filling and packaging will also be featured.

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Eight exciting new colors: blue, cerise, chartreuse, red, orange-yellow, orange-red, orange, pink—for your paints, inks, plastics, latices, and coatings. Write today for free samples of pigments and Technical Bulletin No. 59.
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NEWS

S. W. Paint Convention Plans Being Laid

Tom Ingram, president of the Dallas Paint Varnish Production Club has announced committee chairmen for the forthcoming Southwestern Paint Convention which is to be held in Dallas, May 19, 20, & 21, at the Statler Hilton Hotel.

The committee chairmen appointed are; Mr. Lou DeChellis, Andrew Brown Company, General Chairman; A. J. Espinel, Minnesota Paints, Inc., Raw Material Displays Chairman; J. Hoffmeyer, Sherwin Williams Co., Registration Chairman; W. Minner, DeSoto Chemical Coatings, Inc., Facilities and Hotel Arrangement Chairman; Paul Dague, Jones Blair Paint Co., Program Chairman; Bob Albertini, Sherwin Williams Co., Entertainment Chairman; Eldon Isom, Jones Blair Paint Co., Recreation Chairman; Jim Robbs, JaRo-Chem., Inc., Publicity Chairman; Mrs. Wayne Minner, Ladies Program Chairman; Tony Runfola, National Lead Co., Raw Material Entertainment Chairman.

The theme of this year's convention will be "Development, Participation, Variety, Play and Cultivation."

NPVLA Announces October Meeting

The 73rd Annual Meeting of the National Paint, Varnish and Lacquer Assn. will be held in Chicago, Ill., Thursday, Friday and Saturday, October 27, 28 and 29.

Association Headquarters will be at the Drake Hotel. Additional hotel facilities will be provided by the Knickerbocker, the Palmer House, the Seneca, the Lake Shore Drive and the Ambassador (East and West).

Management workshops and forums, moderated by business and government leaders, again will be features of the business program.

Entertainment and social events are scheduled "around the town" during the breaks from our business sessions. Special treats are being programmed for the ladies.

The Federation of Societies for Paint Technology will meet jointly again with NPVLA this year on Sunday, Monday, Tuesday and Wednesday, October 30-November 2 at the Sherman Hotel, where the Paint Industries Show will be held.

New Coatings Raw Materials Symposium Announced

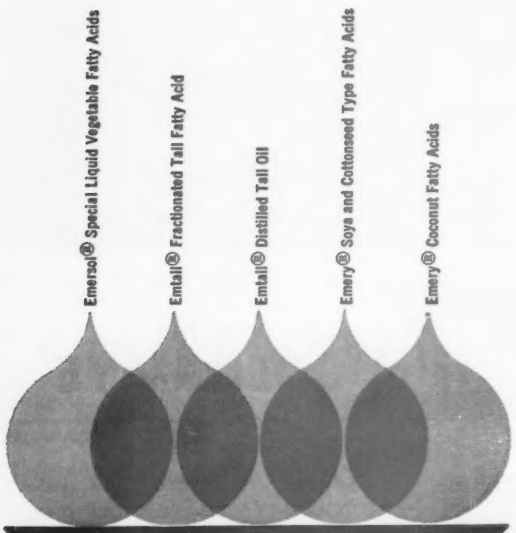
The Coatings Technology Department at the North Dakota Agricultural College announce that the second symposium on *New Coatings and New Coatings Raw Materials* will be held in the School of Chemical Technology on the college campus June 6-9.

Among the topics to be discussed include: Amine-Alkyd-Resin Lacquers, Acrylic and Methacrylic Polymers, Epoxidized Resins, Oxiron Resins, Film Formation, Paint Mildew, Isano Oil, Urethane Coatings, etc.

Hercules Forms New Company

Hercules Powder Co. and A. C. Hatrick, Pty., Ltd., an Australian company, have negotiated an agreement under which they will organize a new jointly owned Australian company, to be known as Hercules Powder Co. (Australia) Pty., Ltd., it was announced.

The new company will provide rosin derivatives and other industrial chemicals for sale in Australia and New Zealand.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Fatty acids are not a sideline with us. Our specialization in this field through modern processes, corrosion resistant equipment and strict quality control assures you of consistent performance. We also consider delivery and service a necessity, not a happenstance.

If our aim to make your use of fatty acids a satisfying experience appeals to you, why not call us or write Dept. X-5 and let us know what you need.

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Emery Industries, Inc., Carew Tower, Cincinnati 2, Ohio
Vopcolene Division, Los Angeles • Emery Industries (Canada) Ltd., London, Ontario • Export Department, Cincinnati

NEWS

New Drum Specifications

American Standard specifications for metal drums and pails have been revised to comply with new ICC regulations. These specifications for ten standard steel containers, ranging from 5 to 55 gallons, are covered in a new publication available from the American Standards Assn., 10 E. 40th St., New York 16, N. Y.

The American Standards, designated MH2.1-1959 through MH2.10-1959, have helped towards the elimination of duplication of steel containers, nominally of the same capacity but of different dimensions. These differences caused manufacturers duplication of raw materials inventories and duplication in tools and dies.

Reichhold Acquires Alsynite

The Board of Directors of Reichhold Chemicals, Inc. has approved the acquisition of the assets of the Alsynite Co. of America for an undisclosed number of shares of Reichhold common stock, subject to the approval of Alsynite stockholders, it was announced.

Included will be the Alsynite Co.'s assets and business in the Alsynite Co. of California, Alsynite Co. of Ohio, Alsynite Co. of New Jersey, Everlite Corp., Plastikool Awning Corp., Ray-O-Lite Corp. of America and Chemiglas, Inc.

The Alsynite Co. of America is engaged primarily in the business of manufacturing and selling plastic panels reinforced with glass fiber mat, and other building and construction products and materials. Reichhold is a major producer and supplier of polyester resins used in the production of these materials.

In connection with the transaction, Reichhold stated it has plans to expand the line produced by Alsynite to use other Reichhold products in making new building materials. The plans also call for expanding the use of Alsynite materials in foreign markets through having them produced by foreign companies.

Over 232 years of paint business "know-how" and experience merge, as Edward F. Norton, Jr., (right), president of the 65-year old Muralo Company, leading manufacturer of paint and paint products, signs contract purchasing the 167 year-old firm of Elder & Jenks, Inc. of Philadelphia, one of the nation's largest independent paint brush manufacturers. Frank Maxwell (left) will continue as president of the brush company.

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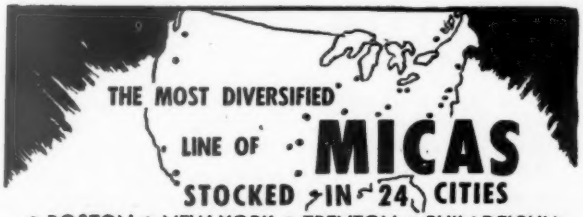

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The English Mica Co.
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Dow To Build Latex Plant in The Netherlands

Plans for construction of a styrene-butadiene latex plant in Rotterdam, The Netherlands, are announced by C. B. Branch, President of Dow Chemical International Limited S. A.

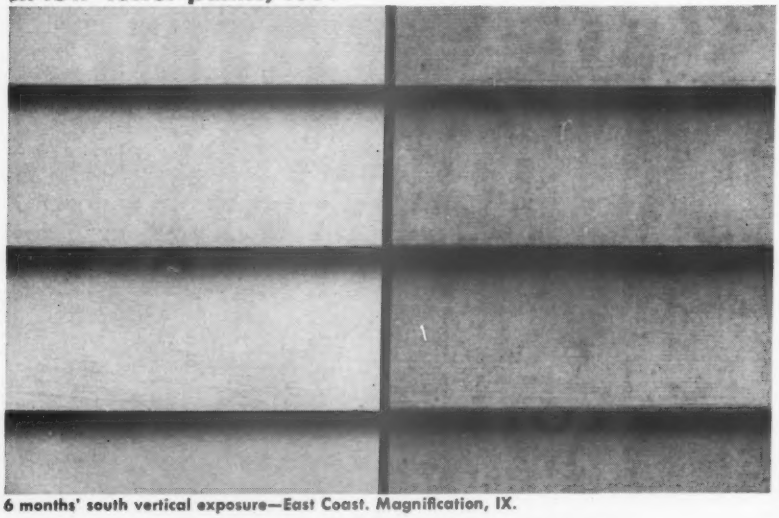
The plant will be built and operated by Dow's wholly-owned Dutch subsidiary, Nederlandsche Dow Maatschappij N. V., at the site of its present terminal and warehousing facilities in the Third Petroleum Harbor at Rotterdam. Investment in the new plant will total more than 7½ million Dutch guilders ($2 million).

Completion of the plant is scheduled for early spring of 1961, and its initial annual capacity is expected to be large enough to cover the increasing styrene-butadiene latex requirements of Western Europe.

The plant will supply latex to manufacturers of industrial paints and packaging materials and to textile and paper industries.

Explaining plans for the new facility, Mr. Branch said: "The increasing demand for styrene-butadiene latex in West European markets has approached the capacity level of an economical production unit. This has prompted our decision to create a source of supply close to the growing market. As a pioneer in the development of synthetic latexes, Dow can make a substantial contribution mutually beneficial to the company and the industries using this product."

In low-luster paints, too:



6 months' south vertical exposure—East Coast. Magnification, IX.

ZINC OXIDE
MAKES THE DIFFERENCE

If you're concerned about the fitness of low-luster paints for exterior use . . . keep these photos in mind. AZI's recommended formulation (left) and a commercial, zinc-free, low-luster paint (right) were subjected to simultaneous exposure. The correct concentration of zinc oxide kept AZI's sample completely free of mildew and spore growth. The other paint proved highly susceptible to attack . . . deteriorated rapidly.

Tests like this further verify this fact. An adequate ZnO content raises the level of performance of outside low-luster formulations . . . just as it improves the service and appearance of any good paint. It improves durability and film integrity . . . resists mildew, staining, and the distinctive effects of ultraviolet light . . . imparts superior chalking characteristics.

For further details, write American Zinc Institute.

AZI **AMERICAN ZINC INSTITUTE, INC.**
292 Madison Avenue, New York 17, N. Y.

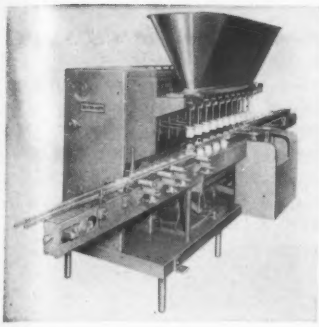
May 16-18. Spring Meeting of Chemical Specialties Mfrs. Assn., Drake Hotel, Chicago, Ill.

May 19-21. Southwestern Paint Convention of the Dallas and Houston Paint and Varnish Production Clubs, Statler Hilton Hotel, Dallas, Tex.

June 3-4. Annual Joint Meeting of the Kansas City and St. Louis Paint & Varnish Production Clubs, St. Louis, Mo.

PRODUCTION CLUBS

Baltimore, 2nd Friday, Park Plaza Hotel.
Chicago, 1st Monday, Furniture Mart.
C.D.I.C., 2nd Monday.
Cincinnati — Oct., Dec., Mar., May, Hotel Alms.
Dayton — Nov., Feb., April, Suttmilers.
Columbus — Jan., June, Sept., Fort Haves Hotel.
Cleveland, 3rd Friday, Cleveland Engineering & Scientific Center.
Dallas, 1st Thursday after 2nd Monday, Melrose Hotel.
Detroit, 4th Tuesday, Rackham Building.
Golden Gate, 3rd Monday, Sabella's Restaurant, San Francisco.
Houston, Monday prior 2nd Tuesday, Rams Club.
Kansas City, 2nd Thursday, Pickwick Hotel.
Los Angeles, 2nd Wednesday, Scully's Cafe.
Louisville, 3rd Wednesday, Seelbach Hotel.
Montreal, 1st Wednesday, Queen's Hotel.
New England, 3rd Thursday, University Club, Boston.
New York, 1st Thursday, Brass Rail, 100 Park Ave.
North Carolina, 3rd Wednesday, Rainbow Supper Club, High Point.
Northwestern, 1st Friday, St. Paul Town and Country Club.
Pacific Northwest, 3rd Thursday, Washington Athletic Club, Seattle, Wash.
Philadelphia, 3rd Wednesday, Philadelphia Rifle Club.
Pittsburgh, 1st Monday, Gateway Plaza, Bldg. 2.
Rocky Mountain, 2nd Monday, Republican Club, Denver, Colo.
St. Louis, 3rd Tuesday, Kings-Way Hotel.
Southern, Annual Meetings Only.
Toronto, 3rd Monday, Oak Room, Union Station.
Western New York, 1st Monday, 40-8 Club, Buffalo.



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COLTON-HOPE No. 19A HIGH SPEED AUTOMATIC fills practically anything

This basic filler with its many accessories offers the specialized performance of a custom machine because it is tailored to your exact needs, widest range of application through change-over accessories, great savings because machine and sub-assemblies are standard. Colton Volumetric precision filling saves money on every fill. Fills liquids, creams, pastes and solids in suspension into bottles, jars, cans. ¾ oz. to 32 oz. per nozzle. 4 to 14 nozzles; up to 30 cycles per min. per nozzle. Write us your requirements.

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Dianol is available to paint manufacturers in 50-pound, triple-lined, waterproof bags.

Your Paint with . . . DIANOL *Paint Insecticide*

Kills All Household Insects

Now you can add complete insect extermination to your paint with Dianol Paint Insecticide. It mixes during manufacture with any type paint regardless of base. Guaranteed effective, Dianol is thoroughly tested and proven. It will not affect in any way the quality of your paint.

Your Paint with . . . DIANOL *Anti-Mildew Compound*

Gives Guaranteed Mildew Protection

Put your paint out in front with Dianol Anti-Mildew Compound for Paint. It offers great competitive advantage . . . complete and lasting mildew protection. Your paint with Dianol has new dimensions that preserve the lasting beauty of your paint. Mix during manufacture; no harmful ingredients, no mercury compounds.

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PERSONNEL CHANGES

COMMERCIAL SOLVENTS

The following appointments to the sales staff of the industrial chemicals dept. have been announced:

Charles R. Hamilton has been named a sales representative assigned to the Mid Atlantic office located in Newark, N. J.

J. H. Brinton Marple, resident salesman in Louisville has been reassigned as a resident salesman in Philadelphia, attached to the Mid-Atlantic Office.

Leon Seifert has been transferred from the Mid-Atlantic Office to residence in Houston, Texas attached to the New Orleans district.

Winton J. Fowler, formerly attached to the New Orleans District Office has been transferred to Atlanta, Georgia.

Walter J. Rushin, resident salesman in Atlanta, Georgia, has been assigned to the company's office at San Francisco.

HERCULES POWDER

Directors of the company at its annual reorganization conferences re-elected all officers of the company as follows: **Albert E. Forster,** president and chairman of the board; **Wyly M. Billing, John J. B. Fulenwider, John R. L. Johnson, Jr., Paul Mayfield, Edward B. Morrow,** vice presidents; **J. H. Tyler McConnell,** secretary, and **E. Charles Stump,** assistant secretary; **John E. Goodman,** treasurer, and **George B. Baylis, Arthur L. Perry, Alto J. Smith, Paul J. Weber,** assistant treasurers.

The directors also re-elected the Executive Committee: **A. E. Forster,** chairman; **W. M. Billing, J. J. B. Fulenwider, J. R. L. Johnson, Jr., P. Mayfield, and E. B. Morrow.**

Re-elected to the Finance Committee were: **E. B. Morrow,** chairman; **A. E. Forster, J. E. Goodman, J. R. L. Johnson, Jr.,** and **J. H. T. McConnell.**

VULCAN STEEL

David W. Lynch has been named General Sales Manager and **Donald R. Hoover** appointed Assistant Sales Manager.

Mr. Lynch, who is widely acquainted with the paint, chemical and petroleum industries, will headquarter at the company's executive offices in Birmingham.

Mr. Hoover, will have his office at Bellwood, Ill.

D. W. Lynch

D. R. Hoover

SPECIALTY RESINS

Philip Kaufman has been appointed to the position of assistant chief engineer. He will be in charge of the design, purchase, and construction of all plant improvements and expansions conducted by the company.

Dr. Walter Brooks and **Dr. Robert N. Johnson** have been named to the positions of senior development chemists.

PATTERSON FOUNDRY

Richard R. Heddleston has rejoined the company as Sales Manager, East Liverpool, Ohio.

R. R. Heddleston

R. L. Harley

REARDON

Robert L. Harley has been named vice-president and general sales manager. Mr. Harley will be in charge of all sales activities and make his headquarters in St. Louis.

NEW CARBIUM® FORMULA WITH C-50 PIGMENT CUTS COSTS, IMPROVES FILM CHARACTERISTICS

This low cost 65% Alkyd Flat White with Carbium and C-50 has an initial viscosity of 95 KU. Reflectance and contrast ratio (.003 inch film Morest Chart) are respectively 88.2 and .958. Outstanding is its color and flatting uniformity.

It provides excellent enamel hold out and stain removal properties. In addition, this formula exhibits excellent overlapping, reduction of flashing and ghosting. On washing, polishing effects are minimized.

	Pounds/100 gals.
Titanox C-50	461.00
CARBIUM	282.00
Aluminum Stearate	4.00
Alkyd Flat Vehicle (40% solids)	382.00
Low Odor Mineral Spirits	132.00
24% Lead Naphthenate	3.00
6% Cobalt Naphthenate	2.00
Anti-Skinning Agent	1.00
Total	1,267.00

For further details on this formula and additional data, write Diamond Alkali Company, 300 Union Commerce Building, Cleveland 14, Ohio.

Diamond Chemicals

COLTON CHEMICAL

David M. Stettler has been named to a new sales office in New York City.

Now responsible for sales and service on national accounts in the metropolitan New York and New England areas, Mr. Stettler has been assigned to a new office at 150 East 42 St., where Air Reduction Company, Inc., maintains headquarters.

D. M. Stettler

J. B. King

DIANOL

Joe B. King has been appointed regional director.

With headquarters in Memphis, Tenn., Mr. King will supervise and direct sales both to distributors and paint manufacturers. Products under his supervision are paint insecticide, mildew preventatives and anti-fouling compound.

SHERWIN-WILLIAMS

Robert H. Hill has been appointed as director of sales. In his new post Mr. Hill will supervise all domestic and export sales of the company.

R. H. Hill

J. S. Brice

GOODYEAR

J. S. Brice has been promoted to district manager of the southeastern district.

Mr. Brice, was formerly the senior sales representative in the district.

AMERICAN CAN

Claude L. Alexander has been appointed a vice president and will continue to supervise the over-all operations of the Bradley-Sun Div., Hillside, N. J.

FOOD MACHINERY

Donald C. Oskin has been named to the newly created position of vice president of executive sales of the Chemical Divisions. At the same time he has been appointed a member of the Chemical Divisions' Executive Committee.

VULCAN STEEL CONTAINER

Gerry C. Cook has been appointed Sales-Service Representative for the State of Tennessee.

G. C. Cook

J. C. Leslie

TNEMEC

J. C. Leslie, assistant and research chemist for two and one-half years has been named as vice-president in charge of production. He succeeds Mr. Richard van Deutekom who has retired.

EMERY INDUSTRIES

J. Paul Dougherty and **Jack Doyle** have been added to the organic chemical sales staff. Mr. Dougherty will be assigned to the New England sales territory, while Mr. Doyle will cover a territory that includes West Virginia, southeastern Ohio, western Pennsylvania, and western New York State.

J. P. Dougherty

Jack Doyle

FOR OUTSIDE HOUSE PAINT

Specify New

ST. JOE

Fast Dispersing

GREEN LABEL #17

ZINC OXIDE

This grade offers the following advantages:

- EASIER WETTING
- LOW OIL ABSORPTION
- BETTER LEVELING
- LOW REACTIVITY
- HIGHER GLOSS
- UNIFORM CONSISTENCY
- EXCELLENT WEATHERING

Grades	Oil Absorption	Particle Size
Green Label No. 17	Low	Large
Green Label No. 45	Med.—Low	Medium
Green Label No. 40	Medium	Medium

GREEN LABEL NO. 17

Heavily calcined, large particle size, dense type, with low oil absorption. Recommended for exterior primers and finishes.

LEAD-FREE ST. JOE ZINC OXIDE

ST. JOE SUPER-DISPERSIONABLE ZINC OXIDES are available to meet any of the requirements of the paint industry. ST. JOE'S ability to manufacture a TAILORED ZINC OXIDE to fit individual needs accounts for the continued and growing use of St. Joe grades in paint formulation.

For further information, write for ST. JOE'S 48-PAGE TECHNICAL DATA BOOK

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250 Park Avenue New York 17, N. Y.

Plant & Laboratory: Monaca (Josephtown), Pa.

A Leading Producer Of Quality Zinc Oxides For Over 30 Years.

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BRIGGS-MARONEY

James J. Mills has been promoted to the newly created position of northeastern sales manager. He will now assume full responsibility for the company's sales force throughout New England and New York.

Peter B. Maroney has assumed the new position of advertising and sales promotion manager.

UNION CARBIDE

Robert Halvorsen has been appointed as a Technical Sales Representative in the mid-western region. Mr. Halvorsen will handle the sale of Bakelite Brand epoxy, polyethylene, phenolic, styrene, and vinyl resins and compounds.

JOHNS-MANVILLE

Sidney Lauren has been added to the staff of the finishes section.

RADIANT COLOR

Brad Clark has been appointed national sales manager, Oakland, Calif. Mr. Clark will make his headquarters at the firm's newly-established sales office and warehouse, in Chicago, Ill.

GLIDDEN

Walter H. Vastrick was named to the sales staff of the Chemicals-Pigments-Metals Div. in Baltimore, Md.

MATHEWS PAINT

George Sutherland has been appointed as Industrial Sales Representative in California.

LENMAR

Michael M. Dexter has been appointed to the post of Chief Chemist. He will be co-ordinator of Product Development, Technical Service and Quality Control Departments.

EASTMAN CHEMICAL

S. M. Ryburn and **G. J. Taylor** have been named district sales managers for the company's industrial and specialty chemicals in the New England and the eastern Pennsylvania, Maryland, Delaware and southern New Jersey areas, respectively.

Mr. Ryburn will continue to make his headquarters in Framingham, Mass., where he has been a sales representative for the past seven years.

S. M. Ryburn

T. L. Dahlberg

DESOTO

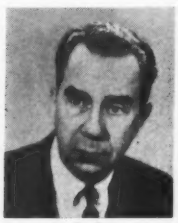
T. L. Dahlberg has been appointed Manager of Maintenance Finishes Sales.

Appointments for three members of the Pigments Dept., **Edmond C. Botti, William R. DeValinger, Jr.,** and **Barton K. Feroe,** were announced.

WITCO

J. Porter Brinton, Jr., has been elected a director of the firm. Mr. Brinton continues as chairman of the boards of two recently acquired, independently operated subsidiaries, Tar Distilling Co., Inc., and Old Colony Tar Co., Inc., both of which he founded in the early 1930's.

J. P. Brinton



C. R. Sutton

COMMERCIAL SOLVENTS

Carroll R. Sutton has been named manager, Chicago District Office.

For the past 26 years, Mr. Sutton has been associated with the firm and since 1937 has been Manager of the Detroit District Office. Under a realignment of sales divisions, Mr. Sutton will continue to be in charge of the Detroit office although he will now make his headquarters in Chicago.

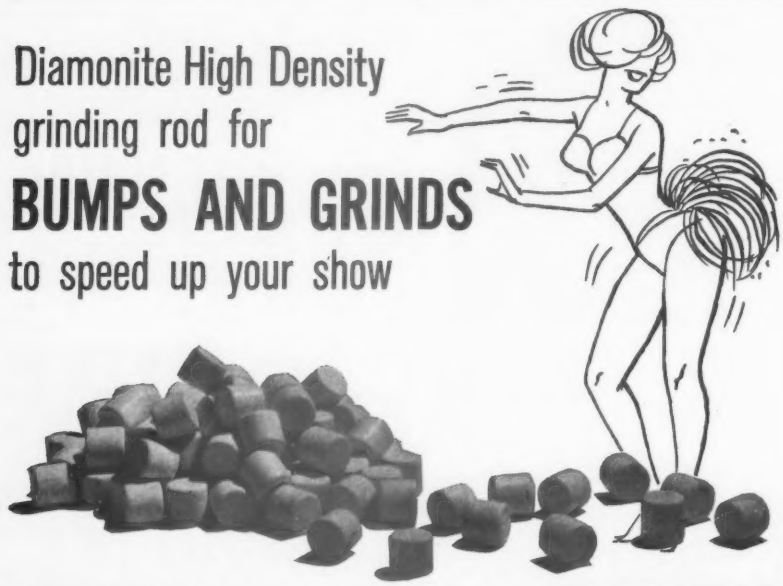
AMOCO CHEMICALS

Lawrence L. Smith has been appointed General Manager—Manufacturing, Chicago, Ill.

Diamonite High Density grinding rod for

BUMPS AND GRINDS

to speed up your show



Why put up with old-fashioned bumping action when modern Diamonite Grinding Rod gives you bumps and grinds that cut milling time up to 50% and more. And, Diamonite high Alumina Ceramic wears longer—minimizes contamination and is highly corrosion resistant as well as impervious to liquids.

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Prices—first cost of Diamonite Rod is comparable with other high density media used in pebble mill operation.

We'll send *you* a "handful" of Diamonite Rods—see for yourself how they give surface contact many times that of spheres or stones.

Note in this handful of cylindrical shaped Diamonite Rods how a plane of contact is naturally formed to give surface contact many times that of spheres or stone shapes.

Write for Bulletin, Prices *and* a "handful" of Diamonite Rods.

DIAMONITE products mfg. co. SHREVE, OHIO. DEPT. PV-5

VELSICOL

The following appointments were announced:

John F. Kirk, vice-president since 1954 and a member of the Board of Directors since 1958, was named executive vice-president of the company.

Bernard H. Lorant, previously assistant to the president in charge of research, was named vice-president in charge of research and was elected to the Board of Directors.

A. B. Chadwick was named vice-president in charge of manufacturing and engineering. Mr. Chadwick was formerly director of manufacturing and engineering.

J. F. Kirk

W. S. Nordburg

AMOCO

William S. Nordburg, Jr. has been named director, overseas projects.

In this newly created position Mr. Nordburg will be responsible for evaluating opportunities overseas for various chemical activities and for developing commercial ventures.

GENERAL MILLS

Dr. John Wicklatz has been employed to lead the Polymer Chemistry Department in Minneapolis, Minn.

HERCULES FILTER

Earl A. N. Johnson, has been appointed representative in the Pacific Northwest.

UNION CARBIDE

Donald T. Smith has been appointed as a Technical Sales Representative to the New England Region, located in Boston, Mass.

McWHORTER

H. Douglas Spruance has been promoted to vice-president in charge of sales and advertising, Chicago, Ill.

NUODEX

Leonard Schaeffer has been named chief of the protective coatings laboratory.

BUHLER BROS.

Berndt Wullenweber and **Frank Kaiser,** co-managers have been named Vice Presidents. Mr. Kaiser still retains his position as Treasurer of the company.

NAPKO PAINT

Joe W. Redden has been appointed Industrial Branch Manager in the New Orleans area.

GOODYEAR

George T. Wingate has been appointed as senior sales representative to the chemical division.

He will be assigned to the division's Phildelphia district but will cover primarily the Washington D. C. and Baltimore areas for the division's line of synthetic rubbers, latices, plastics and chemicals.

G. T. Wingate

R. A. Jones

MONTGOMERY WARD

Robert A. Jones has been named paint department merchandise manager.

Mr. Jones has been vice president and general sales manager of the Hooker Glass and Paint Manufacturing Co.

UBS CHEMICAL

James Rishton has been named New York District Manager. He will be responsible for the operation of the firm's New York District sales office and field sales supervision in that territory.

HERCULES POWDER

Dr. Robert W. Cairns, director of research has been elected a member of the board of directors in Wilmington, Del.

PITTSBURGH COKE

Putnam B. McDowell has been elected vice president-administration, a new position in the Pittsburgh company.

COLUMBIAN CARBON

Bruce W. Barnes and **L. F. McBride** have been named sales representatives for the Carbon Black and Pigment Div.

GENERAL-ELECTRIC

Leonard J. Sacks has been appointed western district sales manager for the Silicone Products Dept Mr. Sacks will be located at the district sales office in Downey, Calif.

L. J. Sacks

D. Lietz

COLTON CHEMICAL

Dennis Lietz has joined the Cleveland firm as a research chemist in the polymer section.

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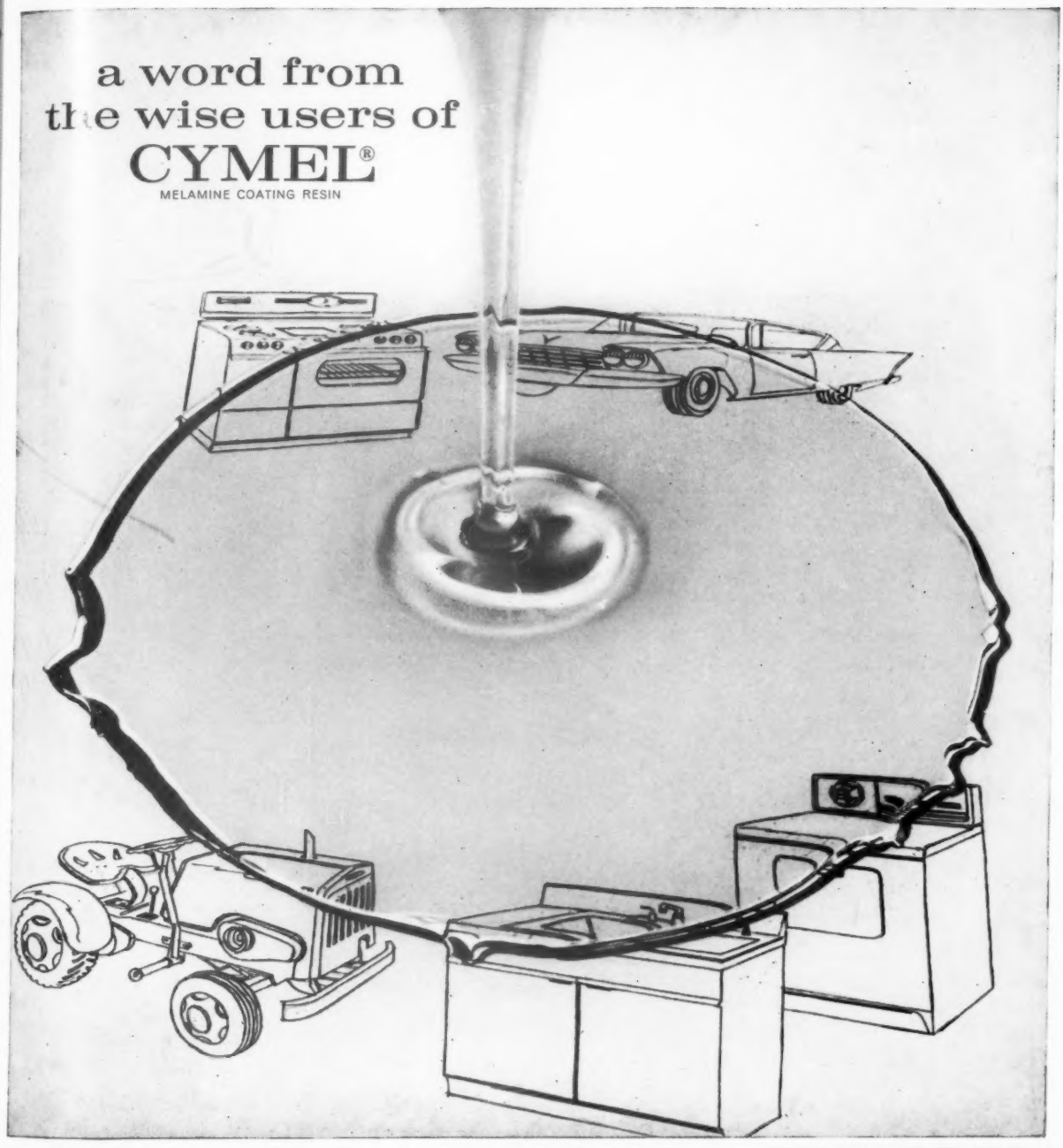

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